OCF Resource Type Specification

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Introduction

This document, and all the other parts associated with this document, were developed in response to worldwide demand for smart home focused Internet of Things (IoT) devices, such as appliances, door locks, security cameras, sensors, and actuators; these to be modelled and securely controlled, locally and remotely, over an IP network.

While some inter-device communication existed, no universal language had been developed for the IoT. Device makers instead had to choose between disparate frameworks, limiting their market share, or developing across multiple ecosystems, increasing their costs. The burden then falls on end users to determine whether the products they want are compatible with the ecosystem they bought into, or find ways to integrate their devices into their network, and try to solve interoperability issues on their own.

In addition to the smart home, IoT deployments in commercial environments are hampered by a lack of security. This issue can be avoided by having a secure IoT communication framework, which this standard solves.

The goal of these documents is then to connect the next 25 billion devices for the IoT, providing secure and reliable device discovery and connectivity across multiple OSs and platforms. There are multiple proposals and forums driving different approaches, but no single solution addresses the majority of key requirements. This document and the associated parts enable industry consolidation around a common, secure, interoperable approach.

The OCF specification suite is made up of nineteen discrete documents, the documents fall into logical groupings as described herein:

- Core framework
  - Core Specification
  - Security Specification
  - Onboarding Tool Specification
- Bridging framework and bridges
  - Bridging Specification
  - Resource to Alljoyn Interface Mapping Specification
  - OCF Resource to oneM2M Resource Mapping Specification
  - OCF Resource to BLE Mapping Specification
  - OCF Resource to EnOcean Mapping Specification
  - OCF Resource to LWM2M Mapping Specification
  - OCF Resource to UPlus Mapping Specification
  - OCF Resource to Zigbee Cluster Mapping Specification
  - OCF Resource to Z-Wave Mapping Specification
- Resource and Device models
  - Resource Type Specification
  - Device Specification
- Core framework extensions
  - Easy Setup Specification
  - Core Optional Specification
- OCF Cloud
  - Cloud API for Cloud Services Specification

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- Device to Cloud Services Specification
- Cloud Security Specification

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OCF Resource Type Specification

1 Scope

This document specifies the Resources that have been defined by OCF that may be exposed by an OCF Device.

Application profile device documents (for example those created for Smart Home or Healthcare) specify device types appropriate to the profile; such documents use Resource Type definitions from this document.

This document is built on top of ISO/IEC 30118-1. ISO/IEC 30118-1 specifies the OCF Framework that enables the implementation of profiles for IoT usages and ecosystems. The OCF Core Framework is scalable to support simple devices (constrained device) and more capable devices (smart device).

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 30118-1 Information technology -- Open Connectivity Foundation (OCF) Specification -- Part 1: Core specification
https://www.iso.org/standard/53238.html
Latest version available at: https://openconnectivity.org/specs/OCF_Core_Specification.pdf

IEC 62386, Digital addressable lighting interface Part 104: General requirements - Wireless and alternative wired system
https://www.dali-alliance.org/dali/standards.html

OpenAPI specification, fka *Swagger RESTful API Documentation Specification*, Version 2.0
https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md

3 Terms, definitions and abbreviated terms

For the purposes of this document, the terms and definitions given in ISO/IEC 30118-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

– ISO Online browsing platform: available at https://www.iso.org/obp
– IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
actuator
Resource with support of the UPDATE operation

3.1.2
Composite Resource Type
Resource Type defined as a Collection of other Resource Types

3.1.3
sensor
Resource without support of the UPDATE operation

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3.2 Symbols and abbreviated terms

BF	Backward Frame
CRUDN	Create Retrieve Update Delete Notify
DALI	Digital Addressable Lighting Interface
FF	Forward Frame

4 Document conventions and organization

4.1 Conventions

In this document a number of terms, conditions, mechanisms, sequences, parameters, events, states, or similar terms are printed with the first letter of each word in uppercase and the rest lowercase (e.g., Resource Type). Any lowercase uses of these words have the normal technical English meaning.

In this document, to be consistent with the IETF usages for RESTful operations, the RESTful operation words CRUDN, CREATE, RETRIVE, UPDATE, DELETE, and NOTIFY will have all letters capitalized. Any lowercase uses of these words have the normal technical English meaning.

4.2 Notation

In this document, features are described as required, recommended, allowed or DEPRECATED as follows:

Required (or shall or mandatory).

> These basic features shall be implemented to comply with OCF Resource Type Specification. The phrases "shall not", and "PROHIBITED" indicate behaviour that is prohibited, i.e. that if performed means the implementation is not in compliance.

Recommended (or should).

> These features add functionality supported by the OCF Resource Type Specification and should be implemented. Recommended features take advantage of the capabilities of the OCF Resource Type Specification, usually without imposing major increase of complexity. Notice that for compliance testing, if a recommended feature is implemented, it shall meet the specified requirements to be in compliance with these guidelines. Some recommended features could become requirements in the future. The phrase "should not" indicates behaviour that is permitted but not recommended.

Allowed (or allowed).

> These features are neither required nor recommended by OCF Resource Type Specification, but if the feature is implemented, it shall meet the specified requirements to be in compliance with these guidelines.

DEPRECATED

> Although these features are still described in this document, they should not be implemented except for backward compatibility. The occurrence of a deprecated feature during operation of an implementation compliant with the current document has no effect on the implementation’s operation and does not produce any error conditions. Backward compatibility may require that a feature is implemented and functions as specified but it shall never be used by implementations compliant with this document.

Conditionally allowed (CA)

> The definition or behaviour depends on a condition. If the specified condition is met, then the definition or behaviour is allowed, otherwise it is not allowed.

Conditionally required (CR)

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The definition or behaviour depends on a condition. If the specified condition is met, then the definition or behaviour is required. Otherwise the definition or behaviour is allowed as default unless specifically defined as not allowed.

Strings that are to be taken literally are enclosed in "double quotes".

Words that are emphasized are printed in *italic*.

5 Baseline model constructs

5.1 URI

The URIs mentioned in this document are non-normative, they may be vendor defined.

An Instance of a Resource is indicated by the URI. When more than one instance of the same Resource Type is used in a Device, different URIs for the different Resource instances shall be used.

An implementation shall follow the requirements defined in ISO/IEC 30118-1 with respect to population of the URI. Please refer to the ISO/IEC 30118-1 clauses 6.2 and 6.3 for specific details.

5.2 OCF Interfaces

5.2.1 Introduction

ISO/IEC 30118-1 specifies that all Resource Types have associated with them at least one OCF Interface; this OCF Interface is advertised during Resource discovery. In addition ISO/IEC 30118-1 defines a number of OCF Interfaces that can be applied to an instance of a Resource Type.

The difference between using sensor/actuator and read/write OCF Interfaces is due to the fact that a sensor/actuator interface describes an action that has immediate effect on the Device, either by reading the sensed value and putting the value on the wire, or as an UPDATE action that something needs to happen (e.g. actuate) on the Device. The read/write OCF Interface is typically used to set a settings value on the Device that might be used later when an action occurs. A typical example is setting the coffee strength that will be used when the coffee is brewed.

5.2.2 Restricting OCF Interface functionality

Note that the functionality associated with, or visibility of, an instance of any Resource exposed by a Device may be restricted depending upon local (per country or legislative region) regulatory requirements or other restrictions (e.g. with respect to Binary Switch in some jurisdictions the ability to remotely power on a connected device is restricted; a lock status could be read-only depending on the context).

The actual implementation of a resource can be limited by:

– Not implementing the optional Properties defined in the payload of a CRUDN operation.

– Removing CRUDN operations

If an UPDATE operation of a resource that can be actuated is not implemented, this change in behaviour is indicated by changing the OCF Interfaces accordingly.

When the resource is defined with the OCF Interface "oic.if.a", and the UPDATE operation is removed then the OCF Interface listed shall be "oic.if.s".

When the resource is defined with the OCF Interface "oic.if.rw", and the UPDATE operation is removed then the OCF Interface listed shall be "oic.if.r".

5.3 OpenAPI specification 2.0 definition

The OpenAPI Specification 2.0 definitions provided in clause 6 in this document are normative.

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The OpenAPI Specification 2.0 definitions are used to describe the payloads of the CRUDN operations on the specified Resource Type. The CRUDN operations are defined in ISO/IEC 30118-1. ISO/IEC 30118-1 also specifies additional Properties in the payloads of the CRUDN operations. The OpenAPI Specification 2.0 definitions in this document are not of themselves sufficient to create an implementation, additional Properties defined in ISO/IEC 30118-1 need to be added to create a compliant implementation. This document makes use of a subset of the responses supported by OpenAPI Specification 2.0, specifics on the use of these responses are defined in Table 4. Note that the actual values of success and error conditions are defined in ISO/IEC 30118-1.

The OpenAPI Specification 2.0 definitions map the OCF CRUDN behaviour to the OpenAPI Specification 2.0 as defined in Table 1.

Table 1 – Conversion between OCF CRUDN and OpenAPI specification 2.0 definitions[1]

Resource	Create	Retrieve	Update	Delete	Notify
/example	post	get	post	delete	N/A

Notify is not part of an OpenAPI Specification 2.0 definition but is defined in ISO/IEC 30118-1. All Resource Types defined in this document support notification via the use of observe as defined in ISO/IEC 30118-1clause 11.4.2.

5.4 Property definition

5.4.1 Common Properties

ISO/IEC 30118-1 specifies a number of Properties that may be defined for Resources. The Common Properties “if” and “rt” shall be specified for all Resource Types defined in this document; they are exposed within the ISO/IEC 30118-1 defined “/oic/res/” Resource Type through which the Server and its available Resources are discovered. The Common Properties “id” and “n” may be specified for all Resource Types defined in this document. Table 2 lists all of the noted Common Properties.

If a Client requires that these Properties be included in a Resource representation that is provided in response to a RETRIEVE operation then the Client shall select the ISO/IEC 30118-1 defined baseline OCF Interface ("oic.if.baseline") by specifying this in a query parameter.

Table 2 – Common Properties for Resources

Property Name	Property Title	Property Value	Value Type	Access Modes	Description
if	Interface	See ISO/IEC 30118-1 clause 7.6.2	Array of string	Readonly	Core defined; OCF Interface(s) supported by the Resource
rt	Resource type	See ISO/IEC 30118-1 clause 7.4	Array of string	Readonly	Core defined; Resource type. The Resource Types are defined in this document. See clause 6
n	Name	See ISO/IEC 30118-1 clause 7.3.2.5	String	Readonly	Core defined; human understandable name for the Resource.

[1] Please refer to ISO/IEC 30118-1 Table 26 for detailed semantics around the appropriate use of CoAP request methods.

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id	Resource Identity	See ISO/IEC 30118-1 clause 7.3.2.6	String	Readonly	Core defined; Unique identifier of the Resource (over all Resources in the Device)

5.4.2 Resource Properties

5.4.2.1 Introduction

The Properties against which the CRUDN operations are specified are defined as part of an OpenAPI Specification 2.0 definition.

A basic Resource Type is formulated around one single value denoting a physical property.

Such a Resource Type is specified with the Properties as defined Table 3. Mandatory in the table means that the Property shall be defined as part of the overall Resource Type schema; actual inclusion of the Property as part of a returned or generated payload is dependent upon the schema that applies to the operation being invoked.

Table 3 – Property definitions of a basic Resource Type

Property Name	Friendly Alias Name	Property Value	Value Type	Value Rules	Access Modes	Mandatory	Description
`<value>,name may change dependent on the Resource`	<value>, name may change dependent on the Resource	Dependent on the Resource	Dependent on the Resource	Dependent on the Resource	Dependent on the Resource	yes	The current value of the Resource
`range`	Range	[Min,Max]	array of integers or numbers	Linear range	Read-only	no	Range of input values, specified as a two element array. See clause 5.4.2.2.
`step`	Step	Dependent on the Resource	Integer or Number	Dependent on the Resource	Read-only	no	Step value across the defined range. See clause 5.4.2.3.
`precision`	Precision	Dependent on the Resource	Number	Dependent on the Resource	Read-only	no	Accuracy granularity of the exposed value. See clause 5.4.2.4.

For Resources, which by their nature have more than one physical parameter, the value Property can be replaced with multiple Properties specifying the different physical parameters, or with further structures such as arrays of Properties, objects, or Collections. The type of the value shall be indicated in the OpenAPI Specification 2.0 definition of the Resource Type and should be suitable

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for the conveyed value. All Property Names and Property Values defined in this document are case sensitive.

5.4.2.2 "range" Property

The "range" defines the valid range for the Property in the Resource as a two element array. This is either an integer or a number range. The first value in the array is the minimum value, the second value in the array is the maximum value.

5.4.2.3 "step" Property

The "step" defines the step value across the defined "range" as either an integer or a number. This is the increment for valid values across the range. For example, for the integer case if the "range" is 0..10 and "step" is 2 then valid values are 0,2,4,6,8,10; for the number case if the "range" is 0.0..10.0 and "step" is 2.5 then valid values are 0.0,2.5,5.0,7.5,10.0.

5.4.2.4 "precision" Property

When exposed the value in "precision" provides a +/- tolerance against the Properties in the Resource. Thus if a Property is UPDATED to a value and that Property then RETRIEVED, the RETRIEVED value is valid if in the range of the set value +/- precision

5.4.3 Basic Resource Schema

All Resource Types defined herein are represented as previously noted by OpenAPI Specification 2.0 files.

5.4.4 CRUDN operation response codes

A Resource can be created or updated depending on the Resource Type definition and the allowed CRUDN operations. The operation may have different response codes with different meanings. This is explained in Table 4.

Table 4 – Return codes behaviour in OpenAPI specification 2.0

Response Code	Meaning
200	Payload of the response will confirm the change. The OpenAPI Specification 2.0 definition will contain a schema to define the payload.
201	Payload is the URL of the Resource that was created by the Server as a result of a CREATE operation. The OpenAPI Specification 2.0 definition will contain schema to define the payload.
204	Ok, everything went well, no payload provided. The OpenAPI Specification 2.0 definition does not contain a schema. The OpenAPI Specification 2.0 definition may even omit this value, since it is regarded as default behaviour of a Server.
403	Case 1: In the case of a RETRIEVE on a Resource with the use of a query parameter selecting specific Property values; if the Server does not support the values provided then this response should be returned. The response payload should include the allowed values for the query parameter. Case 2: The Server could not CREATE or UPDATE the Resource due to a problem with the provided payload. For an UPDATE, unless otherwise stated in the Resource Type definition, the response payload should

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	include the same schema defined for a 200; indicating the current Resource Property value(s).

5.5 Example Resource definitions

Please see the Resource Types in Clause 6 for examples of Resource Definitions. For an example Resource Type that models an actuator refer to the definition of Dimming; for an example Resource Type that models a sensor refer to the definition of an Illuminance Sensor.

5.6 Observable Resource Types

5.6.1 Introduction

ISO/IEC 30118-1 defines a mechanism by which Resources can advertise themselves as “Observable” to a Client. All Resource Types defined in this document may be observed. Whether or not a Resource Type is made observable via use of the Policy Link Parameter is entirely implementation dependent.

5.6.2 Conditional Notification

5.6.2.1 General

All observable Resources may apply conditions to the generation of notifications that result from the observe action, these conditions can be time based or value based or time and value based. This is achieved by composing the Conditional Notification ("oic.r.value.conditional") Resource Type with an instance of an observable Resource; that is the Resource that is exposed by the Server has an “rt” of “[“oic.r.<resource>”,“oic.r.value.conditional”]”.

5.6.2.2 Conditional Notification Property summary

Table 5 summarizes the Properties provided by the Conditional Notification Resource Type. At least one Property from the table shall be present in an instance of the Resource Type.

Table 5 – Conditional Notification Properties

Name	Type	R/W	Required	Description
threshold	number	RW	No	Amount by which the observed value changes before a notification is generated
minnotifyperiod	integer	RW	No	Minimum elapsed time in ms before a notification may be sent
maxnotifyperiod	integer	RW	No	Maximum elapsed time in ms after which a notification is sent

All Properties if exposed shall be set with initial values. All Properties may be exposed with a value of “0” (zero); this indicates that the functionality associated with the Property is not active. Any Client may update the exposed values subject to any ACL restrictions; such changes are global and apply to all notifications that are sent to all observers. A notifier may reject an update to the Property values; in such cases a diagnostic payload should be included in the rejection response indicating the valid ranges for the Properties.

5.6.2.3 Property definition: threshold

Minimum value change between two notifications. A notification shall be sent (within the constraints of “minnotifyperiod”) when the change since the last notification is greater than or equal to this value. The measurement is done against the value in the last notification that was sent; thus all notifications (within any “maxnotifyperiod” constraints that may be present) will carry values that differ by at least “threshold”. A “threshold” value of “0” means that no “threshold” is applied.

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5.6.2.4 Property definition: minnotifyperiod

Minimum time (in ms) that shall occur between notifications. If a value change condition is met (“threshold” equalled or exceeded or any change in value if threshold is not present) before expiration the notification shall not be sent till the period expires. If the Property is present and set to ”0” then no minimum notify period timer is run; if the Property is present and with a value greater than “0” then a minimum notify period timer shall be run equal to the value. The Property value itself is initially populated by the notifier. If the Property is not present, the minimum notify period is up to the notifier. The timer shall be reset each time a notification is sent.

5.6.2.5 Property definition: maxnotifyperiod

Maximum time (in ms) that the notifier shall not exceed between notifications. When the timer expires a notification shall be sent. If present and set to “0” then no maximum notify period timer is run; if present and with a value greater than 0 then a maximum notify period timer shall be run equal to the value. The Property value itself shall be initially populated by the notifier. When both “minnotifyperiod” and “maxnotifyperiod” are present and both are non-zero the value of “maxnotifyperiod” shall be larger than the “minnotifyperiod”. If not present, the value shall be set by the notifier. The timer shall be reset each time a notification is sent.

5.6.2.6 Governing state machine

The “minnotifyperiod” and “maxnotifyperiod” timers are restarted each time a notification is sent (response to the Observe). A notification is sent when value change condition (threshold) and “minnotifyperiod” are both met if both are present. If the observed Property value subsequently drops beneath threshold before the expiration of “minnotifyperiod” the notifier may take no action or a notification may be sent on expiration of “minnotofyperiod” containing the current observed Property value (at the time of the notification). If there are no timer constraints; then notifications are sent whenever the observed Property value has changed by an amount greater than or equal to “threshold”.

Overall logic is defined in Figure 1. Figure 2 provides an illustrative sequence.

```
If minnotifyperiod expired:
  If observed value changed:
    If change amount >= threshold:
      Send notification with current value
      Reset minnotifyperiod , maxnotifyperiod
If maxnotifyperiod expired:
  Get current value
  Send notification with current value
  Reset minnotifyperiod , maxnotifyperiod
```

Figure 1 – Overall conditional notification logic

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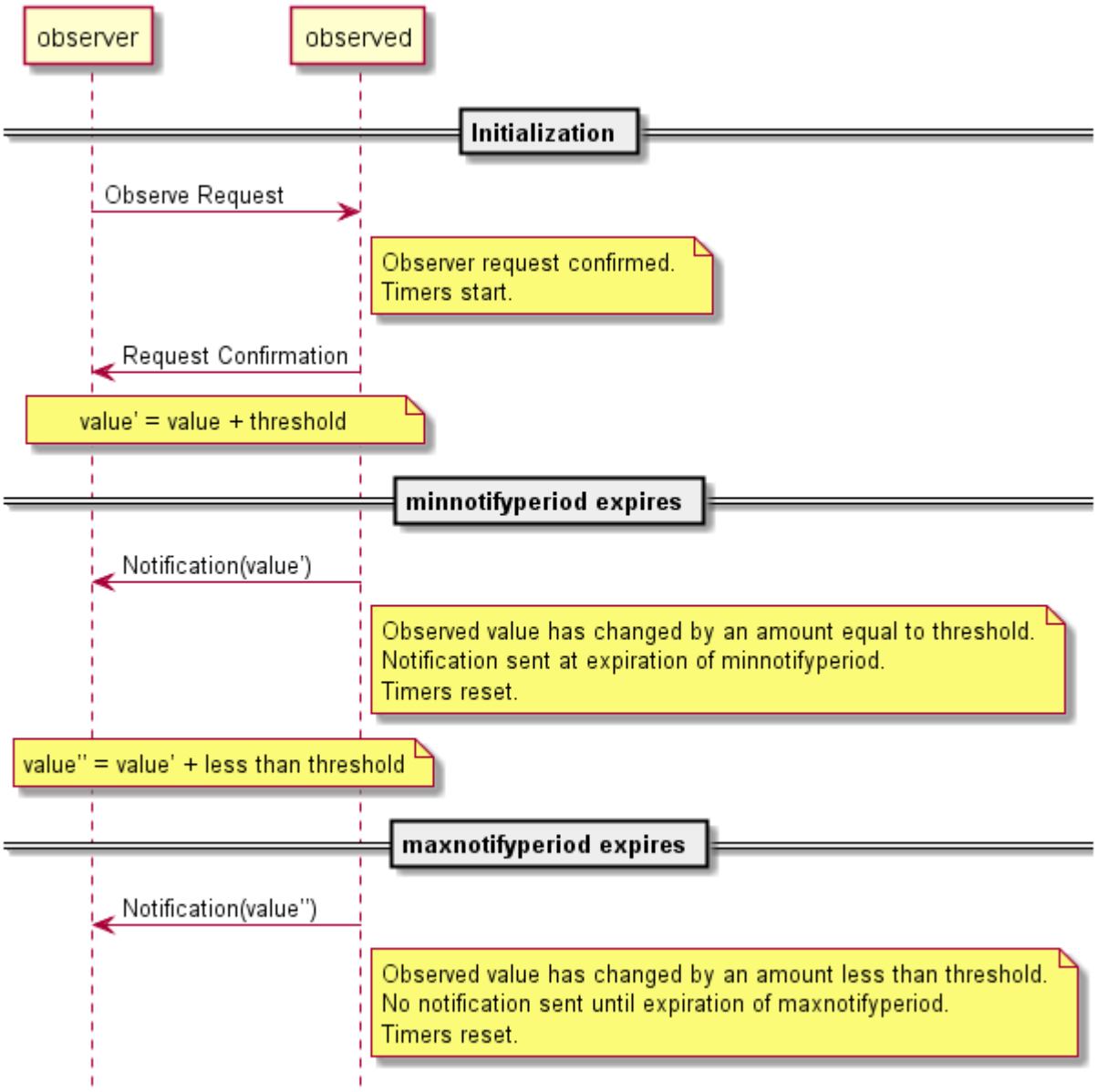

Figure 2 – Conditional Notification example flow

5.7 Composite Resource Types

Composite Resource Types are Resources that comprises of one or more single or other composite Resource Types, an example of which is shown in Figure 3. The Composite Resource Type can be viewed upon as a new single Resource Type. The Composite Resource Type mechanism is a powerful concept since it uses existing Resource Types in a new combination to express more contexts to a Resource without specifying new single unit Resource Types.

Composite Resource Types are defined by linking the referenced existing Resource values in to a Collection.

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The linking is done by using an array of Links; refer to ISO/IEC 30118-1 clause 7.8.2 for more details. Note that the example in Figure 3 contains a partial schema of this definition as it is for descriptive purpose only. The Property name of the array in the example is “resources”.

The contents of the listed Resources can be achieved in a single operation by using the ISO/IEC 30118-1 defined oic.if.b interface.

```
{
  "swagger": "2.0",
  "info": {
    "title": "Compsite Example",
    "version": "v1.1.0-2018",
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CompositeResURI?if=oic.if.baseline" : {
      "get": {
        "description": "Composite Resource.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            {
              "rt": ["oic.r.example"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "id": "unique_example_id",
              "resources": [
                {
                  "href": "/TimeIntervalResURI",
                  "rt":   ["oic.r.time.period"],
                  "if":   ["oic.if.a","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                },
                {
                  "href": "/GasConsumptionResURI",
                  "rt":   ["oic.r.gas.consumption"],
                  "if":   ["oic.if.s","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                }
              ]
            },
            "schema": { "$ref": "#/definitions/composite" }
          }
        }
      }
    }
```

Figure 3 – Composite Resource example

5.8 Document version

Devices conformant to this document version shall add the string “ocf.res.1.3.0” to the dmv Property in "oic.wk.d". This Property is for legacy Device support only and will no longer be revised in alignment with document versions.

5.9 Data types

This document adopts the types defined in ISO/IEC 30118-1 with the exceptions defined in this clause

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All Properties in this document that are defined as JSON number type shall be transmitted encoded as floating point values and not integer values. Reception of Properties defined as JSON number type shall be as defined in ISO/IEC 30118-1. See ISO/IEC 30118-1 clause 12.4 for specifics.

6 Referenced Ecosystems

6.1 DALI

6.1.1 Overview

The DALI bus (reference IEC 62386) contains defined entities:

– Application controller (single or multi master)

– Control gear

– Input device

The communication is defined in forward frames (FF) or backward frames (BF). The FFs are either control commands or notifications, depending on the DALI device type on the system bus. The BFs are responses on the FFs. Not all FFs will initiate a response, this depends on the DALI specification (IEC 62386). The FF and BF in DALI are represented as an array of bytes. The array length depends on the DALI command carried in the FF or BF.

All FFs are initiated by the application controller or being forwarded to the application controller by the input device. The DALI specification clause 4.4 indicates that there is no direct communication between the input device and the control gear. This is depicted in Figure 4.

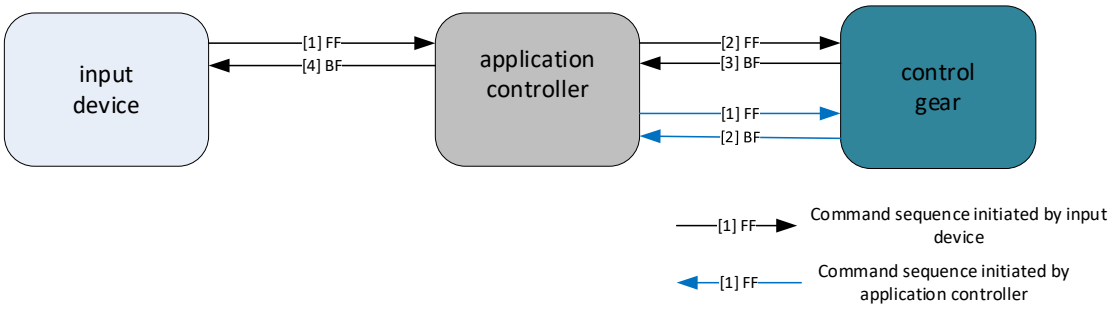

Figure 4 – FFs are always handled by the application controller.

The DALI FF/BF frames may be used in a unicast way (target to a specific DALI device) or multicast way to address a group of DALI devices. The FFs that are commands to multiple DALI devices are send on multicast on OCF level. These group of multicast FF commands have typical no response in normal operation. There is one exception in address commissioning where one or more devices might reply to a DALI Compare command. Three 8-bit integers are broadcast (SearchaddrH, SearchaddrM and SearchaddrL), followed by a DALI Compare command, a device that has an internal random 24bit number (created as a result of the Randomise command) that matches the 3x 8bits shall send 255 as a reply. This DALI process has a maximum lifetime of 15 minutes following the broadcast of a DALI Initialise command, these commands shall be ignored by devices outside the 15-minute window. More than one device may match the random 24bit integer and thus respond to the command. Note that these BF responses are dealt with on the DALI bus and will not be visible on the OCF communication level.

The FF commands that have a reply are typical unicast commands e.g., target to a single DALI device.

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The "oic.r.dali" Resource Type will be used with UPDATE, the UPDATE request payload carries the DALI FF or BF. The FF and BF commands can't be read back. The FFs and BFs are conveyed as Property Values in the OCF payload of this Resource.

There are two typical deployments: using OCF as a tunnel and using OCF as the DALI bus.

6.1.2 OCF as a tunnel

The tunnelling concept may be used to talk to a deployed DALI system. The frames to and from an application controller are transported by means of the "oic.r.dali" resource. The application controller that controls the DALI bus resides on one side of the OCF tunnel and the bus controller will reside on the other side of the OCF tunnel. This is depicted in Figure 5.

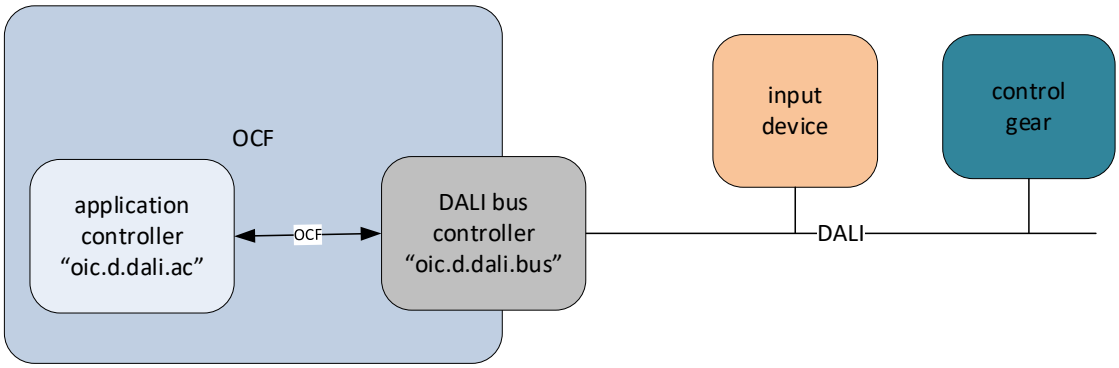

Figure 5 – OCF as Tunnel for the application controller frames

The DALI information is conveyed between the Device with a Device Type of "oic.d.dali.ac" and the Device with a Device Type of "oic.d.dali.bus". The Device with the "oic.d.dali.ac" Device Type constructs the DALI FF commands and interprets the DALI BF commands. This can be achieved without DALI hardware. This Device shall implement the OCF Resource with rt="oic.r.dali". The DALI bus controller (Device Type rt="oic.d.dali.bus") shall implement an OCF Resource with rt="oic.r.dali", it contains DALI technology (e.g. software and hardware) to talk to the connected DALI devices on the bus. See Table 6 for clarification. How the DALI technology is realized is out of scope of this document. The Resource with rt="oic.r.dali" is not a RESTful Resource; it conveys the FFs and BFs with the "oic.if.w" OCF Interface, e.g. the data can't be read back. Note that there may be more than one DALI bus controller in the system; each with a different bus number (see Figure 6).

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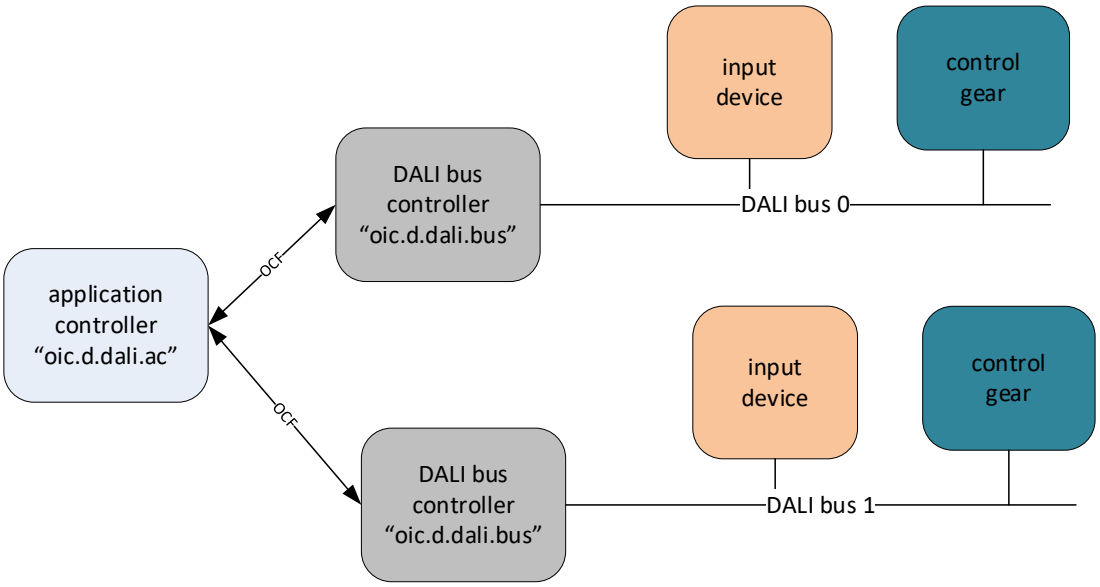

Figure 6 – OCF as Tunnel multiple DALI busses

Table 6 – "oic.r.dali" Resource Type request and response definition

Device Type	Resources types	Description
oic.d.dali.ac	"oic.r.dali"	Conveying DALI FF/BF
oic.d.dali.bus	"oic.r.dali"	Conveying DALI FF/BF
	"oic.r.dali.conf"	bus configuration

The DALI (FF/BF) command set is limited to a single DALI bus. The DALI bus has a limitation of the number of devices on a DALI bus, this due to addressing. To overcome this issue, the OCF layer has an extra Property to indicate different DALI busses in a deployment. This is achieved by having a DALI bus number on the DALI bus controller, this is realized in the "oic.r.dali.conf" Resource Type (see Table 9). The DALI address on the bus should represent the same information as the DALI address used in the FFs and BFs. The "oic.r.dali" resource UPDATE operation may be used for a single DALI device (unicast) and for a set of DALI devices (multicast). When the operation is directed as multicast, a set of DALI busses may be indicated. This is achieved by having the target bus Property "tbus" implemented on the "oic.r.dali" Resource Type. This Property contains the list of DALI bus identifiers that should interpret and execute the sent FF command.

The application controller may build up a mapping between the OCF Devices and the DALI source address. However, it would be easier to have this info available at the OCF level so that all OCF Devices may use the OCF address instead of the DALI unicast address. When the DALI source address is configured, then the DALI device may populate this address in the DALI Resource. When the source address is not yet configured, the value "-1" shall be used to indicate that the value is not yet known because it is not yet assigned. The address is assigned during commissioning by a tool that may be on an application controller (software) or by an external commissioning device. This process involves more than just addressing; examples include items such as group membership, light levels for scenes and various defaults. There are a whole set of DALI commands to address devices on the DALI bus. Each OCF Device may get a bus number assigned by the

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application controller. The default bus number is "0". The UPDATE command conveying an FF instruction for multiple busses shall use the "tbus" Property to convey that this instruction is meant for multiple busses. If "tbus" is omitted from an UPDATE command conveying an FF command, the bus identified with "0" shall be used. Omitting the “tbus” command is analogous to a deployment of a single DALI bus with a bus number of 0.

The Device Type for the DALI bus controller shall have the Device Type "oic.d.dali.bus". The application controller shall have the Device Type "oic.d.dali.ac". Since the IP connection is not real time, the DALI instructions that are timing dependant e.g., commands using send-twice and priority, shall use OCF Properties ("st” and "prio") to convey that extra information. The DALI bus controller shall use this information to generate the correct command (e.g., repeat with the correct timing) on the DALI bus. In Figure 7 the input device and control gear are DALI devices, the application controller on the bus has an OCF and DALI implemented. The DALI messages are grouped in the figure as DALI bus commands.

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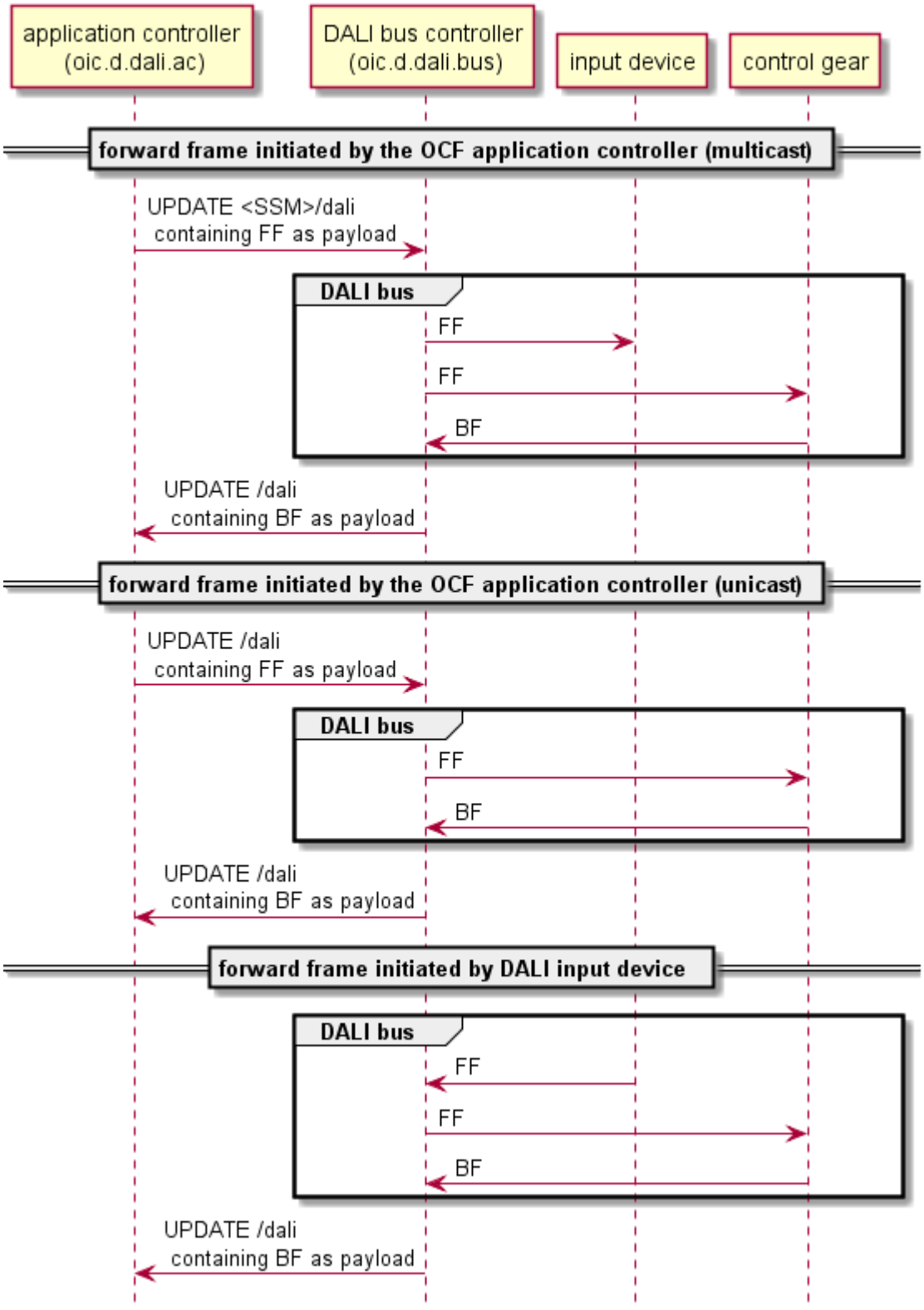

Figure 7 – FFs initiated by the various actors.

The initiators of an FF are the DALI entities application controller and input device. The OCF handling of initiated FF frames are conveyed by the OCF UPDATE command. The UPDATE

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command may be either a multicast command (secured with SSM) or a unicast command. As per DALI specification the input device FF is always directed to the DALI bus controller ("oic.d.dali.bus") which then forwards the command to the correct DALI entity on the DALI bus. This allows DALI FFs and BFs to be communicated outside the DALI bus.

6.1.3 OCF as a DALI bus

The OCF as a bus concept (see Figure 8) may be used to talk to individual OCF Devices that implement the "oic.r.dali" Resource Type. Each OCF Device shall implement the DALI Resource Type "oic.r.dali", capable of interpreting the DALI command FFs and BFs (see Table 7). The frames to and from the application controller are transported by means of OCF UPDATE commands.

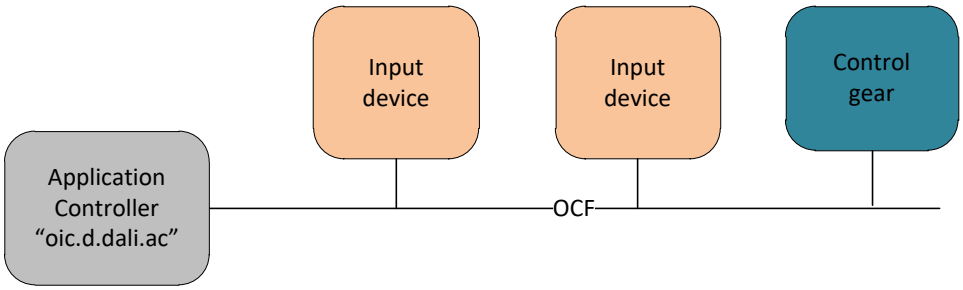

Figure 8 – OCF as a DALI BUS

The DALI information is conveyed by an OCF Resource with rt="oic.r.dali". The operation is not a RESTful; it conveys the FFs and BFs. The Simple Secure Multicast feature (SSM) shall be used for sending the action UPDATE to all OCF Devices that contain the "oic.r.dali" Resource Type. The SSM feature is needed because the FFs initiated by any DALI device may be group commands. The initiators of FFs shall be SSM Clients, being capable of sending secure multicast messages. All recipients of FFs and BFs shall be SSM Servers. The OCF Endpoint of the "oic.r.dali" Resource shall indicate support of SSM.

Figure 9 illustrates the initiation of FFs by different actors in the ecosystem.

The Device Type for the input device and control gear DALI devices shall have the Device Type "oic.d.dali". The application controller will have the Device Type "oic.d.dali.ac".

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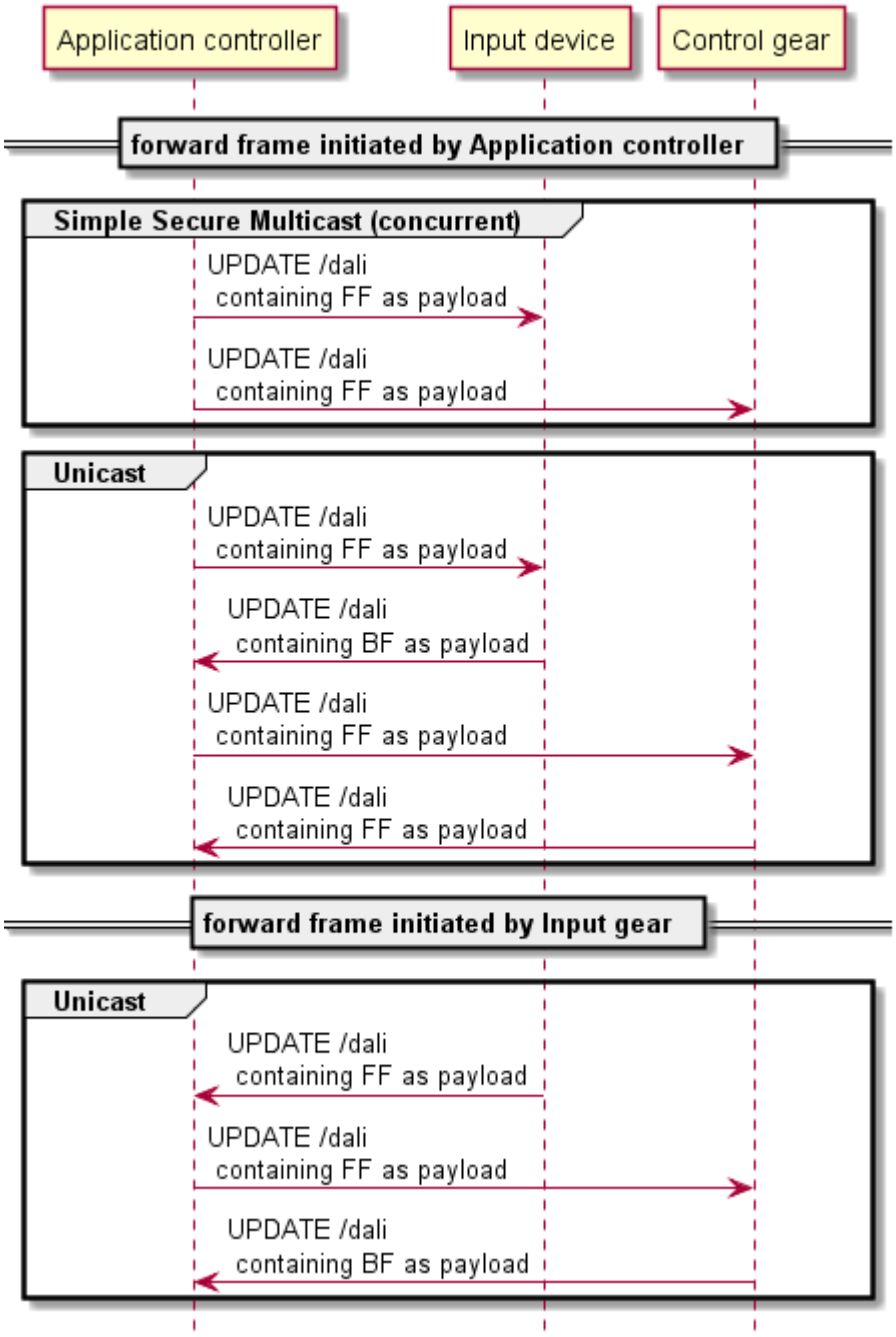

Figure 9 – FFs initiated by the various actors.

6.1.4 Resource definitions to convey DALI commands

Table 7 – DALI Resource

Pre-defined URI	Resource Type Title	Resource Type ID ("rt" value)	OCF Interfaces	Description	Related Functional Interaction
"/dali"	DALI	"oic.r.dali "	"oic.if.rw" "oic.if.baseline"	The Resource to convey DALI FF and BF.	DALI configuration

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Table 8 defines the details for the "oic.r.dali" Resource Type.

Table 8 – "oic.r.dali" Resource Type definition

Property title	Property name	Value type	Value rule	Unit	Access mode	Mandatory	Description
payload	"pld"	array of integers	Min =0 Max – 255 (allowing for mapping to CBOR bytes)	N/A	W	Y	FF or BF data.
payload size	"pld_s"	integer	N/A	N/A	W	Y	Number of frame bytes in the payload.
Target bus	"tbus"	array of integers	N/A	N/A	W	N	FF Update applicable for bus. Used to initiate a SSM command for more than 1 OCF specified DALI bus number.
Source address	"src"	integer	"-1": not assigned	N/A	W	N	This is the DALI source address, e.g.; the address assigned by the application controller by means of DALI FF. This value is populated by the DALI device when the address is configured by the application controller. Value -1 indicates not yet assigned. Used as information to send a unicast command. Note sending the src in the UPDATE does not change the value. Note that the application controller has the default source address 0.
Send-twice	st	boolean	False = interpret command as send once, True = interpret command as send-twice.	N/A	W	N	Command is indicated as send-twice. This means that on the physical DALI bus the command will be sent multiple times with the appropriate timing applied. Default is False.
priority	prio	integer	N/A	N/A	W	N	The command is sent with priority indication. This means that on the physical DALI bus the command will be sent on the DALI bus with the appropriate timing applied. Default = 0 (no priority).

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Table 9 – DALI Configuration Resource

Pre-defined URI	Resource Type Title	Resource Type ID ("rt" value)	OCF Interfaces	Description	Related Functional Interaction
none	DALI configuration	"oic.r.dali.conf"	"oic.if.rw" "oic.if.baseline"	The Resource that configures DALI specifics on OCF level.	DALI lighting

Table 10 defines the details for the "oic.r.dali.conf" Resource Type.

Table 10 – "oic.r.dali.conf" Resource Type definition

Property title	Property name	Value type	Value rule	Unit	Access mode	Mandatory	Description
Bus identifier	"bus"	integer	N/A	N/A	RW	N	Sets the Bus identification for the DALI device
Source address	"src"	integer	"-1": not assigned	N/A	RW	N	This is the DALI source address, e.g.; the address assigned by the application controller by means of DALI FF
DALI version	"ver"	integer	1 or 2	N/A	R	Y	DALI version implemented by the device

7 Resource Type definitions

7.1 Introduction

This clause contains definitions for all Resource Types; the complete set is listed in Table 11 – Alphabetical list of Resource Types.

All Resource Types shall be created in accordance with ISO/IEC 30118-1 clause 7.4. All comparisons against a Resource Type shall be case insensitive.

All Resource Types in this document are prefixed with “oic.r” denoting that it is an OCF defined Resource Type.

Table 11 – Alphabetical list of Resource Types

Friendly Name (informative)	Resource Type (rt)	Clause
3D Printer	oic.r.printer.3d	7.88
Acceleration Sensor	oic.r.sensor.acceleration	7.56
Activity	oic.r.activity	7.127
Activity Count	oic.r.sensor.activity.count	7.24
Activity Tracker Atomic Measurement	oic.r.activitytracker-am	7.128
Air Flow	oic.r.airflow	7.2
Air Flow Control	oic.r.airflowcontrol	7.3
Air Quality	oic.r.airquality	7.66

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Air Quality Collection	oic.r.airqualitycollection	7.67
Alarm	oic.r.alarm	7.129
Altimeter	oic.r.altimeter	7.61
Atmospheric Pressure	oic.r.sensor.atmosphericpressure	7.25
Audio Controls	oic.r.audio	7.26
Auto Focus	oic.r.autofocus	7.27
Automatic Document Feeder	oic.r.automaticdocumentfeeder	7.28
Auto White Balance	oic.r.colour.autowhitebalance	7.32
Battery	oic.r.energy.battery	7.4
Battery Material	oic.r.batterymaterial	7.79
Body Composition Analyser Atomic Measurement	oic.r.bodycompositionanalyser-am	7.155
Binary switch	oic.r.switch.binary	7.5
Blood Pressure	oic.r.blood.pressure	7.89
Blood Pressure Monitor Atomic Measurement	oic.r.bloodpressuremonitor-am	7.90
BMI	oic.r.bmi	7.91
Body Fat	oic.r.body.fat	7.92
Body Fat Free Mass	oic.r.body.ffm	7.93
Body Location Temperature	oic.r.body.location.temperature	7.94
Body Scale Atomic Measurement	oic.r.body.scale-am	7.95
Body Soft Lean Mass	oic.r.body.slm	7.96
Body Thermometer Atomic Measurement	oic.r.bodythermometer-am	7.97
Body Water	oic.r.body.water	7.98
Brewing	oic.r.brewing	7.80
Brightness	oic.r.light.brightness	7.6
Button Switch	oic.r.button	7.29
Cadence	oic.r.cadence	7.144
Calibrate for Continuous Glucose Meter (CGM)	oic.r.cgm.calibrate	7.131
Calorific Value	oic.r.calorificvalue	7.116
Carbon Dioxide Sensor	oic.r.sensor.carbondioxide	7.30
Carbon Monoxide Sensor	oic.r.sensor.carbonmonoxide	7.31
Circuit Breaker (IEC 61850)	oic.r.circuitbreaker	7.145
Civic Location	oic.r.location.civic	7.176
Clock	oic.r.clock	7.62
Colour Chroma	oic.r.colour.chroma	7.7
Colour Hue Saturation	oic.r.colour.hs	7.78
Colour RGB	oic.r.colour.rgb	7.8
Colour Rendering Index	oic.r.colour. renderingindex	7.173
Colour Saturation	oic.r.colour.saturation	7.33
Colour Space Coordinates	oic.r.colour.csc	7.76

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Colour Temperature	oic.r.colour.colourtemperature	7.77
Consumable	oic.r.consumable	7.68
Consumable Collection	oic.r.consumablecollection	7.69
Contact Sensor	oic.r.sensor.contact	7.34
Continuous Glucose Meter (CGM) Atomic Measurement	oic.r.cgm-am	7.130
Conversion Factor	oic.r.conversionfactor	7.117
Cycling Power	oic.r.cyclingpower	7.146
Dali (Lighting)	oic.r.dali	7.180
Dali configuration (Lighting)	oic.r.dali.config	7.181
Delay Defrost	oic.r.delaydefrost	7.70
Demand Response Load Control (DRLC)	oic.r.energy.drlc	7.35
Deodorization	oic.r.deodorization	7.152
Device Settings - Accessibility	oic.r.settings.accessibility	7.164
Device Settings - Broadcasting	oic.r.settings.broadcasting	7.165
Device Settings - Picture	oic.r.settings.picture	7.166
Device Settings - Sound	oic.r.settings.sound	7.167
Device Settings - Support	oic.r.settings.support	7.168
Device Settings - System	oic.r.settings.system	7.169
Dimming	oic.r.light.dimming	7.9
Door	oic.r.door	7.10
Ecomode	oic.r.ecomode	7.71
Electric Vehicle Connector	oic.r.vehicle.connector	7.86
Electrical Energy	oic.r.energy.electrical	7.81
Energy Consumption	oic.r.energy.consumption	7.11
Energy Generation	oic.r.energy.generation	7.82
Energy Overload/Circuit Breaker	oic.r.energy.overload	7.36
Energy Usage	oic.r.energy.usage	7.12
Gas Consumption	oic.r.gas.consumption	7.118
Gas Usage	oic.r.gas.usage	7.119
Fault Interrupter Switch	oic.r.switch.fault	7.156
Foaming	oic.r.foaming	7.83
Generic Sensor	oic.r.sensor	7.37
Generic Measurement Sensor	oic.r.sensor.measurement	7.170
Geolocation Sensor	oic.r.sensor.geolocation	7.63
Glass Break Sensor	oic.r.sensor.glassbreak	7.38
Glucose	oic.r.glucose	7.99
Glucose Meter Complex Carbohydrates	oic.r.glucose.carb	7.100
Glucose Meter Exercise	oic.r.glucose.exercise	7.101
Glucose Meter HbA1c	oic.r.glucose.hba1c	7.102
Glucose Meter Context Health	oic.r.glucose.health	7.103

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Glucose Meter Context Meal	oic.r.glucose.meal	7.104
Glucose Meter Context Medication	oic.r.glucose.medication	7.105
Glucose Meter Atomic Measurement	oic.r.glucosemeter-am	7.106
Glucose Meter Context Sample Location	oic.r.glucose.samplelocation	7.107
Glucose Meter Context Tester	oic.r.glucose.tester	7.108
Grinder	oic.r.grinder	7.84
HVAC Capacity	oic.r.hvac.capacity	7.157
Heart Rate	oic.r.heartrate	7.136
Heart Rate Monitor Atomic Measurement Representation	oic.r.heartratemonitor-am	7.137
Heart Rate Zone Sensor	oic.r.sensor.heart.zone	7.39
Heating Zone	oic.r.heatingzone	7.72
Heating Zone Collection	oic.r.heatingzonecollection	7.73
Height	oic.r.height	7.64
Humidity	oic.r.humidity	7.13
IAS Zone Info	oic.r.iaszoneinfo	7.124
IAS Zone Collection	oic.r.iaszone	7.125
Icemaker	oic.r.icemaker	7.14
Illuminance Sensor	oic.r.sensor.illuminance	7.40
Impact Sensor	oic.r.impactsensor	7.120
Inverter (IEC 61850)	oic.r.inverter	7.147
KeyCard Switch	oic.r.keycardswitch	7.153
Keypad Character	oic.r.keypadchar	7.121
Liquid Level	oic.r.liquid.level	7.85
Lock	oic.r.lock.status	7.15
Lock Code	oic.r.lock.code	7.16
Magnetic Field Direction	oic.r.sensor.magneticfielddirection	7.41
Media	oic.r.media	7.42
Media Audio	oic.r.media.audio	7.158
Media Core	oic.r.media.core	7.159
Media Image	oic.r.media.image	7.160
Media Source	oic.r.mediasource	7.43
Media Source List	oic.r.mediasourcelist	7.44
Media Source Input	oic.r.media.input	7.45
Media Source Output	oic.r.media.output	7.46
Media Text	oic.r.media.text	7.161
Media Video	oic.r.media.video	7.162
Mode	oic.r.mode	7.17
Movement	oic.r.movement.linear	7.57
Motion Sensor	oic.r.sensor.motion	7.47
Muscle Oxygen Saturation	oic.r.muscleoxygensaturation	7.154

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Night Mode	oic.r.nightmode	7.48
Opaque Data	oic.r.opaquedata	7.122
Open Level	oic.r.openlevel	7.18
Operational State	oic.r.operational.state	7.19
Optical RFID Station	oic.r.orfid.station	7.109
Optical RFID Tag	oic.r.orfid.tag	7.110
Pan Tilt Zoom Movement	oic.r.ptz	7.50
Power Source	oic.r.powersource	7.111
Presence Sensor	oic.r.sensor.presence	7.49
Print Queue	oic.r.printer.queue	7.112
Pulsatile Characteristic for Pulse Oximeter	oic.r.pulsatilecharacteristic	7.138
Pulsatile Occurrence for Pulse Oximeter	oic.r.pulsatileoccurrence	7.139
Pulse Oximeter Atomic Measurement Representation	oic.r.pulseoximeter-am	7.140
Pulse Rate	oic.r.pulserate	7.113
PV array system connection terminal (IEC 61850)	oic.r pvconnectionterminal	7.148
Ramp Time	oic.r.light.ramptime	7.20
Refrigeration	oic.r.refrigeration	7.21
Remote Control	oic.r.remotecontrol	7.177
Restricted Switch	oic.r.switch.restricted	7.163
Sampling Interface for Continuous Glucose Meter (CGM)	oic.r.cgm.samplinginterval	7.132
Selectable Levels	oic.r.selectablelevels	7.74
Sensor for Continuous Glucose Meter (CGM)	oic.r.cgm.sensor	7.133
Sensor Properties	oic.r.sensor.props	7.114
Signal Strength	oic.r.signalstrength	7.51
Sleep	oic.r.sleep	7.141
Sleep Monitor Atomic Measurement Batch Representation	oic.r.sleepmonitor-am	7.142
Sleep Sensor	oic.r.sensor.sleep	7.58
Smoke Sensor	oic.r.sensor.smoke	7.59
Sound Pressure - dB	oic.r.sound.pressurelevel	7.175
Sound Pressure - Pascal	oic.r.sound.pressure	7.174
Speech Synthesis	oic.r.speech.tts	7.52
Speed	oic.r.speed	7.149
SpO2 for Pulse Oximeter	oic.r.spo2	7.143
Status for Continuous Glucose Meter (CGM)	oic.r.cgm.status	7.134
TV Applications	oic.r.tv.apps	7.178
Temperature	oic.r.temperature	7.22

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Three Axis Sensor	oic.r.sensor.threeaxis	7.60
Threshold for Continuous Glucose Meter (CGM)	oic.r.cgm.threshold	7.135
Time Period	oic.r.time.period	7.23
Time Stamp	oic.r.time.stamp	7.87
Torque	oic.r.torque	7.150
Touch Sensor	oic.r.sensor.touch	7.53
UV Radiation	oic.r.sensor.radiation.uv	7.54
UVA Radiation	oic.r.sensor.radiation.uva	7.171
UVB Radiation	oic.r.sensor.radiation.uvb	7.172
User ID	oic.r.userid	7.115
User Info for Application Layer	oic.r.userinfo	7.123
Value Conditional	oic.r.value.conditional	7.75
Vendor List	oic.r.vendorlist	7.179
Water Info	oic.r.waterinfo	7.151
Water Sensor	oic.r.sensor.water	7.55
Weight	oic.r.weight	7.65
Window Covering	oic.r.windowcovering	7.126

7.2 Air Flow

7.2.1 Introduction

This Resource describes Properties associated with air flow.
The Property "supporteddirections" is the set of valid values for the direction property for a particular instance of this Resource Type.
The Property "direction" is the directionality of the air flow if applicable, if Property "supporteddirections" is also present it must be a value from that set.
The values of Property "direction" are dependent on the capabilities of the unit.
The Property "speed" is an integer representing the current speed level for the unit.
The Property "range" is an array of the min,max values for the speed level. If not present the "range" defaults to [0,100].
Property "automode" is the status of the automode feature; Off means automode is not enabled, On means automode is active and the speed is automatically controlled by the Device.

7.2.2 Example URI

/AirFlowResURI

7.2.3 Resource type

The Resource Type is defined as: "oic.r.airflow".

7.2.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
```

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```
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with air flow.\nThe Property
\"supporteddirections\" is the set of valid values for the direction property for a particular
instance of this Resource Type.\nThe Property \"direction\" is the directionality of the air flow if
applicable, if Property \"supporteddirections\" is also present it must be a value from that set.\n
The values of Property \"direction\" are dependent on the capabilities of the unit.\nThe Property
\"speed\" is an integer representing the current speed level for the unit.\nThe Property \"range\"
is an array of the min,max values for the speed level. If not present the \"range\" defaults to
[0,100].\n Property \"automode\" is the status of the automode feature; Off means automode is not
enabled, On means automode is active and the speed is automatically controlled by the Device.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.airflow"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "supporteddirections": ["left", "right", "centre"],
                  "direction": "left",
                  "speed": 5,
                  "range": [1, 7],
                  "automode": "Off"
                },
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      },
      "post": {
        "description": "When \"automode\" is set to true, \"direction\" and \"speed\" are not
utilized by the device.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AirFlow" },
            "x-example":
              {
                "direction": "right",
                "speed": 3
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "direction": "right",
                  "speed": 3
                },
              "schema": {"$ref": "#/definitions/AirFlow" }
            },
            "403": {
              "description": "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an invalid Property value for direction.\n  An UPDATE with an out of range property
value for speed.\nThe server may respond with the current resource representation.\n",
              "x-example":
```

```
                {
                  "supporteddirections": ["left", "right", "centre"],
                  "direction": "right",
                  "speed": 3
                },
              "schema": { "$ref": "#/definitions/AirFlow" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirFlow" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type",
          "items": {
              "enum": ["oic.r.airflow"],
              "maxLength": 64,
              "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "speed" : {
          "description": "The current speed level.",
          "type": "integer"
        },
        "direction" : {
          "description": "The directionality of the air flow, a value indicated by
\"supporteddirections\".",
          "type": "string"
        },
        "automode" : {
          "description": "The status of the automode feature, if on speed is set by the Device.",
          "enum": [
            "On",
            "Off"
          ],
          "type": "string"
        },
        "supporteddirections" : {
          "description": "The array of possible direction settings for this instance of the Resource
Type.",
          "items": {
            "minItems": 1,
            "type": "string",
            "uniqueItems": true
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
```

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```
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["speed"]
    }
  }
}
```

7.2.5 Property definition

Table 12 defines the Properties that are part of the "oic.r.airflow" Resource Type.

Table 12 – The Property definitions of the Resource with type "rt" = "oic.r.airflow".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
speed	integer	Yes	Read Write	The current speed level.
direction	string	No	Read Write	The directionality of the air flow, a value indicated by "supporteddirections".
automode	string	No	Read Write	The status of the automode feature, if on speed is set by the Device.
supporteddirections	array: see schema	No	Read Only	The array of possible direction settings for this instance of the Resource Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.2.6 CRUDN behaviour

Table 13 defines the CRUDN operations that are supported on the "oic.r.airflow" Resource Type.

Table 13 – The CRUDN operations of the Resource with type "rt" = "oic.r.airflow".

Create	Read	Update	Delete	Notify
	get	post		observe

7.3 Air Flow Control

7.3.1 Introduction

This Resource describes the attributes associated with control of air flow,
for example as modelled by a Thermostat (fan), Room A/C or other device.
The Resource is a Collection of:
AirFlow Resource
BinarySwitch Resource

7.3.2 Example URI

/AirFlowControlResURI

7.3.3 Resource type

The Resource Type is defined as: "oic.r.airflowcontrol".

7.3.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Flow Control",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirFlowControlResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {"href": "/BinarySwitchResURI", "rt":["oic.r.switch.binary"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
              {"href": "/AirFlowResURI", "rt":["oic.r.airflow"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
            ],
```

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```
            "schema": { "$ref": "#/definitions/AirFlowControl-ll" }
          }
        }
      }
    },
    "/AirFlowControlResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/BinarySwitchResURI",
                "rep": {
                  "value": true
                }
              },
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "supporteddirections": ["left","right","centre"],
                  "direction":  "right",
                  "speed":      3,
                  "range":      [1,7],
                  "automode":   "Off"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
          }
        }
      },
      "post": {
        "description": "Sets the current air flow control values using the batch OCF Interface\n",
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Update" },
            "x-example": [
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "direction": "left",
                  "speed":     4
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {
                "href": "/BinarySwitchResURI",
                "rep": {
                  "value": true
                }
              },
              {
                "href": "/AirFlowResURI",
                "rep": {
                  "supporteddirections": ["left","right","centre"],
```

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```
                  "direction":  "left",
                  "speed":      4,
                  "range":      [1,7],
                  "automode":   "Off"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirFlowControlBatch-Retrieve" }
          }
        }
      }
    },
    "/AirFlowControlResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource describes the attributes associated with control of air
flow,\nfor example as modelled by a Thermostat (fan), Room A/C or other device.\nThe Resource is a
Collection of:\n  AirFlow Resource\n  BinarySwitch Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  {
              "rt":   ["oic.r.airflowcontrol"],
              "rts":  ["oic.r.airflow","oic.r.switch.binary"],
              "if":   ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "links":[
                {"href": "/BinarySwitchResURI", "rt":["oic.r.switch.binary"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/AirFlowResURI", "rt":["oic.r.airflow"],
"if":["oic.if.a","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ]
            },
            "schema": { "$ref": "#/definitions/AirFlowControl-baseline" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    },
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirFlowControl-ll" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
```

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```
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.switch.binary","oic.r.airflow"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
```

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```
      ]
    },
    "AirFlowControl-baseline" : {
      "properties": {
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rt": {
          "description": "Resource Type of this Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.airflowcontrol"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "items": {
            "type": "string",
            "enum": ["oic.r.airflow","oic.r.switch.binary"],
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          },
          "type": "array",
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "type" : "object",
      "required": ["rt","rts","if","links"]
    },
    "AirFlowControlBatch-Retrieve" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "items": {
```

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```
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirFlowResURI.swagger.json#/definitions/
AirFlow"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BinarySwitchResURI.swagger.json#/definit
ions/BinarySwitch"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    },
    "AirFlowControlBatch-Update" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirFlowResURI.swagger.json#/definitions/
AirFlow"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BinarySwitchResURI.swagger.json#/definit
ions/BinarySwitch"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```

7.3.5 Property definition

Table 14 defines the Properties that are part of the "oic.r.airflowcontrol" Resource Type.

Table 14 – The Property definitions of the Resource with type "rt" = "oic.r.airflowcontrol".

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	

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eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	Resource Type of this Resource
rts	array: see schema	Yes	Read Only	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by this Resource
links	array: see schema	Yes	Read Only	A set of simple or individual OCF Links.
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

7.3.6 CRUDN behaviour

Table 15 defines the CRUDN operations that are supported on the "oic.r.airflowcontrol" Resource Type.

Table 15 – The CRUDN operations of the Resource with type "rt" = "oic.r.airflowcontrol".

Create	Read	Update	Delete	Notify
	get			observe

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7.4 Battery

7.4.1 Introduction

This Resource describes the attributes associated with a battery. The Property "charge" is an integer showing the current battery charge level as a percentage in the range 0 (fully discharged) to 100 (fully charged). The Property "capacity" represents the total capacity of battery in Amp Hours (Ah). The "charging" status and "discharging" status are represented by boolean values set to "true" indicating enabled and "false" indicating disabled. Low battery status is represented by a boolean value set to "true" indicating low charge level and "false" indicating otherwise, based upon the battery threshold represented as a percentage.

7.4.2 Example URI

/BatteryResURI

7.4.3 Resource type

The Resource Type is defined as: "oic.r.energy.battery".

7.4.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Battery",
    "version": "20190618",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with a battery. The
Property \"charge\" is an integer showing the current battery charge level as a percentage in the
range 0 (fully discharged) to 100 (fully charged). The Property \"capacity\" represents the total
capacity of battery in Amp Hours (Ah). The \"charging\" status and \"discharging\" status are
represented by boolean values set to \"true\" indicating enabled and \"false\" indicating disabled.
Low battery status is represented by a boolean value set to \"true\" indicating low charge level and
\"false\" indicating otherwise, based upon the battery threshold represented as a percentage.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.energy.battery"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "charge": 50,
              "capacity": 3000,
              "charging": true,
              "discharging": false,
              "lowbattery": false,
              "batterythreshold": 20,
              "defect": false,
              "timestamp": "2015-11-05T14:30:00.20Z"
            },
            "schema": { "$ref": "#/definitions/Battery" }
          }
```

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```
      }
    },
    "post": {
      "description": "Sets current battery values\n",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/BatteryUpdate" },
          "x-example":
          {
            "batterythreshold": 20
          }
        }
      ],
      "responses": {
        "200": {
          "description" : "",
          "x-example":
          {
            "batterythreshold": 20
          },
          "schema": { "$ref": "#/definitions/BatteryUpdate" }
        }
      }
    }
  }
},
"parameters": {
  "interface" : {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "Battery" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.energy.battery"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "discharging": {
        "description": "The status of discharging.",
        "readOnly": true,
        "type": "boolean"
      },
      "lowbattery": {
        "description": "The status of the low battery warning based upon the defined threshold.",
        "readOnly": true,
        "type": "boolean"
      },
      "capacity": {
        "description": "The total capacity in Amp-hours (Ah).",
        "readOnly": true,
        "type": "number"
      },
       "batterythreshold": {
        "description": "The threshold percentage for the low battery warning.",
        "maximum": 100,
        "minimum": 0,
```

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```
          "type": "integer"
        },
        "charge": {
          "description": "The current charge percentage.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "charging": {
          "description": "The status of charging.",
          "readOnly": true,
          "type": "boolean"
        },
        "defect": {
          "description": "Battery defect detected. True = defect, False = no defect",
          "readOnly": true,
          "type": "boolean"
        },
        "timestamp": {
          "description": "An RFC3339 formatted time indicating when the data was observed (e.g.:
2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
          "format": "date-time",
          "readOnly": true,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["charge"]
    },
    "BatteryUpdate": {
      "properties": {
        "batterythreshold": {
          "description": "The threshold percentage for the low battery warning.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      },
      "type" : "object",
      "required": ["batterythreshold"]
    }
  }
}
```

7.4.5 Property definition

Table 16 defines the Properties that are part of the "oic.r.energy.battery" Resource Type.

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Table 16 – The Property definitions of the Resource with type "rt" = "oic.r.energy.battery".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
discharging	boolean	No	Read Only	The status of discharging.
lowbattery	boolean	No	Read Only	The status of the low battery warning based upon the defined threshold.
capacity	number	No	Read Only	The total capacity in Amp-hours (Ah).
batterythreshold	integer	No	Read Write	The threshold percentage for the low battery warning.
charge	integer	Yes	Read Only	The current charge percentage.
charging	boolean	No	Read Only	The status of charging.
defect	boolean	No	Read Only	Battery defect detected. True = defect, False = no defect
timestamp	string	No	Read Only	An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
batterythreshold	integer	Yes	Read Write	The threshold percentage for the low battery warning.

7.4.6 CRUDN behaviour

Table 17 defines the CRUDN operations that are supported on the "oic.r.energy.battery" Resource Type.

Table 17 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.battery".

Create	Read	Update	Delete	Notify
	get	post		observe

7.5 Binary Switch

7.5.1 Introduction

This Resource describes a binary switch (on/off).
The Property "value" is a boolean.

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A value of 'true' means that the switch is on.
A value of 'false' means that the switch is off.

7.5.2 Example URI

/BinarySwitchResURI

7.5.3 Resource type

The Resource Type is defined as: "oic.r.switch.binary".

7.5.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Binary Switch",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BinarySwitchResURI" : {
      "get": {
        "description": "This Resource describes a binary switch (on/off).\nThe Property \"value\" is
a boolean.\nA value of 'true' means that the switch is on.\nA value of 'false' means that the switch
is off.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.switch.binary"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "value": false
                },
              "schema": { "$ref": "#/definitions/BinarySwitch" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/BinarySwitch" },
            "x-example":
              {
                "value": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
```

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```
              "x-example":
                {
                  "value": true
                },
              "schema": { "$ref": "#/definitions/BinarySwitch" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "BinarySwitch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.switch.binary"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The status of the switch.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.5.5 Property definition

Table 18 defines the Properties that are part of the "oic.r.switch.binary" Resource Type.

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Table 18 – The Property definitions of the Resource with type "rt" = "oic.r.switch.binary".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Write	The status of the switch.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.5.6 CRUDN behaviour

Table 19 defines the CRUDN operations that are supported on the "oic.r.switch.binary" Resource Type.

Table 19 – The CRUDN operations of the Resource with type "rt" = "oic.r.switch.binary".

Create	Read	Update	Delete	Notify
	get	post		observe

7.6 Brightness

7.6.1 Introduction

This Resource describes the brightness of a light or lamp.
The Property "brightness" is an integer showing the current brightness level as a quantized representation in the range 0-100.
A brightness of 0 is the minimum for the resource.
A brightness of 100 is the maximum for the resource.

7.6.2 Example URI

/BrightnessResURI

7.6.3 Resource type

The Resource Type is defined as: "oic.r.light.brightness".

7.6.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Brightness",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrightnessResURI" : {
      "get": {
        "description": "This Resource describes the brightness of a light or lamp.\nThe Property
```

```
\"brightness\" is an integer showing the current brightness level as a quantized representation in
the range 0-100.\nA brightness of 0 is the minimum for the resource.\nA brightness of 100 is the
maximum for the resource.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.light.brightness"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "brightness": 50
                },
              "schema": { "$ref": "#/definitions/Brightness" }
            }
        }
      },
      "post": {
        "description": "Sets the desired brightness level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Brightness" },
            "x-example":
              {
                "brightness": 10
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the brightness was changed.\nThe new brightness level
is provided in the response.\n",
              "x-example":
                {
                  "brightness": 10
                },
              "schema": { "$ref": "#/definitions/Brightness" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Brightness" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.brightness"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "brightness": {
```

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```
          "description": "The Quantized representation in the range 0-100 of the current sensed or
set value for Brightness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["brightness"]
    }
  }
}
```

7.6.5 Property definition

Table 20 defines the Properties that are part of the "oic.r.light.brightness" Resource Type.

Table 20 – The Property definitions of the Resource with type "rt" = "oic.r.light.brightness".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
brightness	integer	Yes	Read Write	The Quantized representation in the range 0-100 of the current sensed or set value for Brightness.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.6.6 CRUDN behaviour

Table 21 defines the CRUDN operations that are supported on the "oic.r.light.brightness" Resource Type.

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Table 21 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.brightness".

Create	Read	Update	Delete	Notify
	get	post		observe

7.7 Colour Chroma

7.7.1 Introduction

This Resource describes the colour using chroma conventions.
Properties are "hue", "saturation", "csc", and "ct".
The Property "hue" is the hue angle, it is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for "saturation" is 32767.
The Property "csc" is the colour space coordinates in CIE colour space.
The first item in the array is the X coordinate.
The second item in the array is the Y coordinate.
The Property "nct" is the Mired colour temperature.
The Resource provides the colour using chroma conventions.

7.7.2 Example URI

/example/ColourChromaResURI

7.7.3 Resource type

The Resource Type is defined as: "oic.r.colour.chroma".

7.7.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Chroma",
    "version": "20190215",
     "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourChromaResURI" : {
      "get": {
        "description": "This Resource describes the colour using chroma conventions.\nProperties are
\"hue\", \"saturation\", \"csc\", and \"ct\".\nThe Property \"hue\" is the hue angle, it is an
integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).\nThe
Property \"saturation\" is an integer value as defined by the CIECAM02 model definition (see
reference [CIE CIE159:2004]).\nThe Property \"maximumsaturation\" is the upper bound on the
saturation supported by the Device.\nIf not present the maximum value for \"saturation\" is
32767.\nThe Property \"csc\" is the colour space coordinates in CIE colour space.\n  The first item
in the array is the X coordinate.\n  The second item in the array is the Y coordinate.\nThe Property
\"nct\" is the Mired colour temperature.\nThe Resource provides the colour using chroma
conventions.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
```

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```
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt": ["oic.r.colour.chroma"],
                "if": [ "oic.if.a", "oic.if.baseline"],
                "hue": 256.0,
                "saturation": 212,
                "maximumsaturation": 1000,
                "csc": [0.41, 0.51],
                "ct": 457
              },
            "schema": { "$ref": "#/definitions/ColourChroma" }
          }
      }
    },
    "post": {
      "description": "Sets current colour chroma values\n",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/ColourChroma" },
          "x-example":
            {
              "hue": 300.0,
              "saturation": 212,
              "csc": [0.41, 0.51],
              "ct": 457
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "hue": 300.0,
                "saturation": 212,
                "csc": [0.41, 0.51],
                "ct": 467
              },
            "schema": { "$ref": "#/definitions/ColourChroma" }
          }
      }
    }
  }
},
"parameters": {
  "interface" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
     "ColourChroma" : {
        "properties": {
              "rt" : {
                "description": "The Resource Type.",
                "items": {
                  "enum": ["oic.r.colour.chroma"],
                  "maxLength": 64,
                  "type": "string"
                },
                "minItems": 1,
                "uniqueItems": true,
                "readOnly": true,
```

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```
                "type": "array"
              },
              "ct" : {
                "description": "The Mired colour temperature.",
                "minimum": 0,
                "type": "integer"
              },
              "hue" : {
                "description": "The hue angle as defined by the CIECAM02 model definition.",
                "maximum": 360.0,
                "minimum": 0.0,
                "type": "number"
              },
              "saturation" : {
                "description": "The saturation as defined by the CIECAM02 model definition.",
                "maximum": 32767,
                "minimum": 0,
                "type": "integer"
              },
              "maximumsaturation" : {
                "description": "The maximum supported value of \"saturation\" for this Device.",
                "maximum": 32767,
                "minimum": 0,
                "readOnly": true,
                "type": "integer"
              },
              "csc" :  {
                "description": "The X and Y coordinates of the colour in CIE colour space",
                "items": {
                  "maximum": 1,
                  "minimum": 0,
                  "type": "number"
                },
                "maxItems": 2,
                "minItems": 2,
                "type": "array"
              },
              "n": {
                "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
              },
              "id": {
                "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
              },
              "if" :  {
                "description": "The OCF Interface set supported by this Resource.",
                "items": {
                  "enum": [
                    "oic.if.a",
                    "oic.if.baseline"
                  ],
                  "maxLength": 64,
                  "type": "string"
                },
                "minItems": 2,
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
              }
            },
            "type" : "object",
            "required": ["hue", "saturation", "csc"]
        }
    }
}
```

7.7.5 Property definition

Table 22 defines the Properties that are part of the "oic.r.colour.chroma" Resource Type.

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Table 22 – The Property definitions of the Resource with type "rt" = "oic.r.colour.chroma".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
ct	integer	No	Read Write	The Mired colour temperature.
hue	number	Yes	Read Write	The hue angle as defined by the CIECAM02 model definition.
saturation	integer	Yes	Read Write	The saturation as defined by the CIECAM02 model definition.
maximumsaturation	integer	No	Read Only	The maximum supported value of "saturation" for this Device.
csc	array: see schema	Yes	Read Write	The X and Y coordinates of the colour in CIE colour space
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.7.6 CRUDN behaviour

Table 23 defines the CRUDN operations that are supported on the "oic.r.colour.chroma" Resource Type.

Table 23 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.chroma".

Create	Read	Update	Delete	Notify
	get	post		observe

7.8 Colour RGB

7.8.1 Introduction

This Resource specifies the actual colour in the RGB space represented as an array of integers.
Each colour value is described with a Red, Green, Blue component.
These colour values are encoded as an array of integer values ([R,G,B]).
The minimum and maximum colour value per component may be described by the Property "range".
When "range" is omitted, then the "range" is [0,255].

7.8.2 Example URI

/ColourRGBResURI

7.8.3 Resource type

The Resource Type is defined as: "oic.r.colour.rgb".

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7.8.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour RGB",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourRGBResURI" : {
      "get": {
        "description": "This Resource specifies the actual colour in the RGB space represented as an
array of integers.\nEach colour value is described with a Red, Green, Blue component.\nThese colour
values are encoded as an array of integer values ([R,G,B]).\nThe minimum and maximum colour value
per component may be described by the Property \"range\".\nWhen \"range\" is omitted, then the
\"range\" is [0,255].",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.rgb"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "rgbValue": [255, 255, 255],
                  "range": [0, 255]
                },
              "schema": { "$ref": "#/definitions/ColourRGB" }
            }
        }
      },
      "post": {
        "description": "Sets the current colourRGB value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourRGB" },
            "x-example":
              {
                "rgbValue": [255, 0, 0]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rgbValue": [255, 0, 0]
                },
              "schema": { "$ref": "#/definitions/ColourRGB" }
            }
        }
      }
    }
```

```
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourRGB" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.rgb"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rgbValue": {
          "description": "The RGB value; the first item is the R, second the G, third the B.",
          "items": {
            "type": "integer"
          },
          "maxItems": 3,
          "minItems": 3,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["rgbValue"]
    }
  }
```

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```
}
```

7.8.5 Property definition

Table 24 defines the Properties that are part of the "oic.r.colour.rgb" Resource Type.

Table 24 – The Property definitions of the Resource with type "rt" = "oic.r.colour.rgb".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
rgbValue	array: see schema	Yes	Read Write	The RGB value; the first item is the R, second the G, third the B.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.8.6 CRUDN behaviour

Table 25 defines the CRUDN operations that are supported on the "oic.r.colour.rgb" Resource Type.

Table 25 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.rgb".

Create	Read	Update	Delete	Notify
	get	post		observe

7.9 Dimming

7.9.1 Introduction

This Resource describes a dimming function.
The Property "dimmingSetting" is an integer showing the current dimming level.
If Property "step" is present then it represents the increment between dimmer values.
When the Property "range" is omitted, then the range is [0,100].
A value of 0 means total dimming; a value of 100 means no dimming.

7.9.2 Example URI

/DimmingResURI

7.9.3 Resource type

The Resource Type is defined as: "oic.r.light.dimming".

7.9.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Dimming",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DimmingResURI" : {
      "get": {
        "description": "This Resource describes a dimming function.\nThe Property \"dimmingSetting\"
is an integer showing the current dimming level.\nIf Property \"step\" is present then it represents
the increment between dimmer values.\nWhen the Property \"range\" is omitted, then the range is
[0,100].\nA value of 0 means total dimming; a value of 100 means no dimming.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.light.dimming"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "dimmingSetting": 30,
                  "step": 5,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      },
      "post": {
        "description": "Sets the desired dimming level.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Dimming" },
            "x-example":
              {
                "dimmingSetting": 40
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the dimming was changed.\nThe new dimming level is
provided in the response.\n",
              "x-example":
                {
                  "dimmingSetting": 40
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            },
            "403": {
              "description": "This response is generated by the OCF Server when the client sends:\n
An update with an out of range property value for dimmingSetting.\nThe server responds with the
current resource representation.\n",
              "x-example":
                {
                  "dimmingSetting": 40
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      }
```


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```
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Dimming" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.dimming"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "dimmingSetting": {
          "description": "The current dimming value.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["dimmingSetting"]
    }
  }
}
```

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7.9.5 Property definition

Table 26 defines the Properties that are part of the "oic.r.light.dimming" Resource Type.

Table 26 – The Property definitions of the Resource with type "rt" = "oic.r.light.dimming".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
dimmingSetting	integer	Yes	Read Write	The current dimming value.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.9.6 CRUDN behaviour

Table 27 defines the CRUDN operations that are supported on the "oic.r.light.dimming" Resource Type.

Table 27 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.dimming".

Create	Read	Update	Delete	Notify
	get	post		observe

7.10 Door

7.10.1 Introduction

This Resource describes the open state of the door.
A door is modelled by means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).
For Property "openState", the value 'Open' indicates the door is open.
The value 'Closed' indicates the door is closed.
The type of Property "openDuration" is an RFC Time encoded string.
The Property "openAlarm" value 'true' indicates that the open alarm is active.
The openAlarm value 'false' indicates that open alarm is not active.
retrieves the state of the Door.

7.10.2 Example URI

/DoorResURI

7.10.3 Resource type

The Resource Type is defined as: "oic.r.door".

7.10.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Door",
    "version": "20190215",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DoorResURI" : {
      "get": {
        "description": "This Resource describes the open state of the door.\nA door is modelled by
means of openState (Open/Closed), openDuration (ISO 8601 Time), and openAlarm (boolean).\nFor
Property \"openState\", the value 'Open' indicates the door is open.\nThe value 'Closed' indicates
the door is closed.\nThe type of Property \"openDuration\" is an RFC Time encoded string.\nThe
Property \"openAlarm\" value 'true' indicates that the open alarm is active.\nThe openAlarm value
'false' indicates that open alarm is not active.\nretrieves the state of the Door.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt": ["oic.r.door"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "openState": "Open",
              "openDuration": "P0Y0M0DT2H25M5S",
              "openAlarm": true
            },
            "schema": { "$ref": "#/definitions/Door" }
          }
        }
      },
      "post": {
        "description": "Sets the current Door properties.\nThe only property that can be set as part
of an update operation is\n  the openAlarm.\nThis can be made active (true) or inactive (false)\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DoorUpdate" },
            "x-example": {
              "openAlarm":  false
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "openAlarm":  false
            },
            "schema": { "$ref": "#/definitions/DoorUpdate" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
```

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```
  },
  "definitions": {
    "Door" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.door"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "openDuration": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "openState": {
          "description": "The state of the door (open or closed).",
          "enum": [
            "Open",
            "Closed"
          ],
          "readOnly": true,
          "type": "string"
        },
        "openAlarm": {
          "description": "The state of the door open alarm.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["openState"]
    },
     "DoorUpdate" : {
      "properties": {
        "openAlarm": {
          "description": "The state of the door open alarm.",
          "type": "boolean"
        }
      },
      "type": "object",
      "required": ["openAlarm"]
    }
  }
```

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```
}
```

7.10.5 Property definition

Table 28 defines the Properties that are part of the "oic.r.door" Resource Type.

Table 28 – The Property definitions of the Resource with type "rt" = "oic.r.door".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
openDuration	multiple types: see schema	No	Read Write	
openState	string	Yes	Read Only	The state of the door (open or closed).
openAlarm	boolean	No	Read Write	The state of the door open alarm.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
openAlarm	boolean	Yes	Read Write	The state of the door open alarm.

7.10.6 CRUDN behaviour

Table 29 defines the CRUDN operations that are supported on the "oic.r.door" Resource Type.

Table 29 – The CRUDN operations of the Resource with type "rt" = "oic.r.door".

Create	Read	Update	Delete	Notify
	get	post		observe

7.11 Energy Consumption

7.11.1 Introduction

This Resource describes the energy consumed by the Device since power up (the energy value is in Watt Hours [Wh])
and the instantaneous power draw of the device (the power value is in Watts [W]) at the time the resource was queried.
The Property "power" value is in Watts [W].
The Property "energy" value is in Watt Hours [Wh].
The Resource provides the current power draw and cumulative energy usage.

7.11.2 Example URI

/EnergyConsumptionResURI

7.11.3 Resource type

The Resource Type is defined as: "oic.r.energy.consumption".

7.11.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Consumption",
```

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```
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyConsumptionResURI" : {
      "get": {
        "description": "This Resource describes the energy consumed by the Device since power up
(the energy value is in Watt Hours [Wh]) \nand the instantaneous power draw of the device (the power
value is in Watts [W]) at the time the resource was queried.\nThe Property \"power\" value is in
Watts [W].\nThe Property \"energy\" value is in Watt Hours [Wh].\nThe Resource provides the current
power draw and cumulative energy usage.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.energy.consumption"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "power": 2000.1,
                  "energy": 3500.4
                },
              "schema": { "$ref": "#/definitions/Consumption" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Consumption" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.consumption"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "power": {
          "description": "The instantaneous Power.",
          "readOnly": true,
          "type": "number"
        },
        "energy": {
          "description": "The energy consumed.",
          "readOnly": true,
```

```
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["power", "energy"]
    }
  }
}
```

7.11.5 Property definition

Table 30 defines the Properties that are part of the "oic.r.energy.consumption" Resource Type.

Table 30 – The Property definitions of the Resource with type "rt" = "oic.r.energy.consumption".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
power	number	Yes	Read Only	The instantaneous Power.
energy	number	Yes	Read Only	The energy consumed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.11.6 CRUDN behaviour

Table 31 defines the CRUDN operations that are supported on the "oic.r.energy.consumption" Resource Type.

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Table 31 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.consumption".

Create	Read	Update	Delete	Notify
	get			observe

7.12 Energy Usage

7.12.1 Introduction

This Resource describes a cumulative time-based energy usage query..
The Resource is a Collection of:
TimePeriod Resource
EnergyConsumption Resource

7.12.2 Example URI

/EnergyUsageResURI

7.12.3 Resource type

The Resource Type is defined as: "oic.r.energy.usage".

7.12.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Usage",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyUsageResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query.\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/TimePeriodResURI", "rt":["oic.r.time.period"],
"if":["oic.if.a","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/EnergyConsumptionResURI", "rt":["oic.r.energy.consumption"],
"if":["oic.if.s","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/Usage-ll" }
          }
        }
      }
    },
    "/EnergyUsageResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query.\nThe
```

```
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-01-09T14:30Z",
                  "stopTime": "2015-01-09T14:45Z"
                }
              },
              {
                "href": "/EnergyConsumptionResURI",
                "rep": {
                  "power":  2000.1,
                  "energy": 3500.4
                }
              }
            ],
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Retrieve" }
          }
        }
      },
      "post": {
        "description": "Sets the timer period of the query using the batch OCF Interface\n",
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Update" },
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-03-15T10:30Z",
                  "stopTime": "2015-03-15T10:45Z"
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2015-03-15T10:30Z",
                  "stopTime": "2015-03-15T10:45Z"
                }
              },
              {
                "href": "/EnergyConsumptionResURI",
                "rep": {
                  "power":  1500.1,
                  "energy": 2200.4
                }
              }
            ],
            "schema": { "$ref": "#/definitions/EnergyUsageBatch-Retrieve" }
          }
        }
      }
    },
    "/EnergyUsageResURI?if=oic.if.baseline" : {
```

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```
      "get": {
        "description": "This Resource describes a cumulative time-based energy usage query..\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  EnergyConsumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt": ["oic.r.energy.usage"],
                "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
                "rts": ["oic.r.time.period","oic.r.energy.consumption"],
                "links": [
                  {"href": "/TimePeriodResURI", "rt":["oic.r.time.period"],
"if":["oic.if.a","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/EnergyConsumptionResURI", "rt":["oic.r.energy.consumption"],
"if":["oic.if.s","oic.if.baseline"], "eps":[{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
              },
            "schema": { "$ref": "#/definitions/Usage-baseline" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    },
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    }
  },
  "definitions": {
    "Usage-ll": {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
```

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```
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.time.period","oic.r.energy.consumption"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "Usage-baseline": {
      "properties": {
        "rt": {
          "description": "Resource Type of this Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.energy.usage"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
```

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```
        },
        "rts": {
          "items": {
            "enum": [
              "oic.r.time.period",
              "oic.r.energy.consumption"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "type": "array",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          }
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["rt","if","links"]
    },
    "EnergyUsageBatch-Retrieve" : {
      "type": "array",
      "minItems": 2,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitio
ns/TimePeriod"},
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/EnergyConsumptionResURI.swagger.json#/de
```

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```
finitions/Consumption"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    },
    "EnergyUsageBatch-Update" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {"$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitio
ns/TimePeriod"}
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```

7.12.5 Property definition

Table 32 defines the Properties that are part of the "oic.r.energy.usage" Resource Type.

Table 32 – The Property definitions of the Resource with type "rt" = "oic.r.energy.usage".

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	

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type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of this Resource
rts	array: see schema	No	Read Only	
links	array: see schema	Yes	Read Write	A set of simple or individual OCF Links.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

7.12.6 CRUDN behaviour

Table 33 defines the CRUDN operations that are supported on the "oic.r.energy.usage" Resource Type.

Table 33 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.usage".

Create	Read	Update	Delete	Notify
	get			observe

7.13 Humidity

7.13.1 Introduction

This Resource describes a sensed or desired humidity.
The Property "humidity" is an integer describing the percentage measured relative humidity.
The Property "desiredHumidity" is an integer showing the desired target relative humidity.

7.13.2 Example URI

/HumidityResURI

7.13.3 Resource type

The Resource Type is defined as: "oic.r.humidity".

7.13.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
```

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```
    "title": "Humidity",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HumidityResURI" : {
      "get": {
        "description": "This Resource describes a sensed or desired humidity.\nThe Property
\"humidity\" is an integer describing the percentage measured relative humidity.\nThe Property
\"desiredHumidity\" is an integer showing the desired target relative humidity.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current (relative) humidity level.",
              "x-example":
                {
                  "rt": ["oic.r.humidity"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "humidity": 40,
                  "desiredHumidity": 40
                },
              "schema": { "$ref": "#/definitions/Humidity" }
            }
        }
      },
      "post": {
        "description": "Sets the desired relative humidity level.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/HumidityUpdate" },
            "x-example":
              {
                "desiredHumidity" : 45
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the relative humidity level was changed.\nThe new
relative humidity level is provided in the response.",
              "x-example":
                {
                  "desiredHumidity": 45
                },
              "schema": { "$ref": "#/definitions/HumidityUpdate" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
```

```
      "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Humidity" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.humidity"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "desiredHumidity": {
          "description": "The desired value for humidity.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "humidity": {
          "description": "The current sensed value for humidity.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["humidity"]
    },
    "HumidityUpdate" : {
      "properties": {
        "desiredHumidity": {
          "description": "Desired value for Humidity",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["desiredHumidity"]
    }
```

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```
  }
}
```

7.13.5 Property definition

Table 34 defines the Properties that are part of the "oic.r.humidity" Resource Type.

Table 34 – The Property definitions of the Resource with type "rt" = "oic.r.humidity".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
desiredHumidity	integer	No	Read Write	The desired value for humidity.
humidity	integer	Yes	Read Only	The current sensed value for humidity.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
desiredHumidity	integer	Yes	Read Write	Desired value for Humidity

7.13.6 CRUDN behaviour

Table 35 defines the CRUDN operations that are supported on the "oic.r.humidity" Resource Type.

Table 35 – The CRUDN operations of the Resource with type "rt" = "oic.r.humidity".

Create	Read	Update	Delete	Notify
	get	post		observe

7.14 Ice Maker

7.14.1 Introduction

This Resource describes an the operational state of an Ice Maker.
The Property "status" is a string containing a value from the set of possible ice maker statuses.
The possible statuses are defined by the enumeration ["on", "off", "full"]
A status of "on" means that the Ice Maker is operating.
A status of "off" means that the Ice Maker is not operating.
A status of "full" means that the ice collection bin is full (Ice Maker is operating).

7.14.2 Example URI

/IceMakerResURI

7.14.3 Resource type

The Resource Type is defined as: "oic.r.icemaker".

7.14.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ice Maker",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
```

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```
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IceMakerResURI" : {
      "get": {
        "description": "This Resource describes an the operational state of an Ice Maker.\nThe
Property \"status\" is a string containing a value from the set of possible ice maker statuses.\nThe
possible statuses are defined by the enumeration [\"on\", \"off\", \"full\"]\nA status of \"on\"
means that the Ice Maker is operating.\nA status of \"off\" means that the Ice Maker is not
operating.\nA status of \"full\" means that the ice collection bin is full (Ice Maker is
operating).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current Ice Maker status.",
              "x-example":
                {
                  "rt": ["oic.r.icemaker"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "status": "on"
                },
              "schema": { "$ref": "#/definitions/IceMaker" }
            }
        }
      },
      "post": {
        "description": "Sets the desired Ice Maker status.\nOnly valid settings for \"status\" in a
UPDATE shall be \"on\" or \"off\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/IceMakerUpdate" },
            "x-example":
              {
                "status": "off"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the Ice Maker status was changed.\nThe new status  is
provided in the response.\n",
              "x-example":
                {
                  "status": "off"
                },
              "schema": { "$ref": "#/definitions/IceMakerUpdate" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an invalid property value for \"status\".\nThe OCF Server responds with the current
resource representation.\n",
              "x-example":
                {
                  "status": "off"
                },
              "schema": { "$ref": "#/definitions/IceMakerUpdate" }
            }
```

```
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "IceMaker" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.icemaker"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "The status of the Ice Maker.",
          "enum": [
            "on",
            "off",
            "full"
          ],
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["status"]
    },
    "IceMakerUpdate" : {
      "properties": {
        "status": {
          "description": "Set the status of the Ice Maker.",
          "enum": [
            "on",
            "off"
          ]
```

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```
        }
      },
      "type": "object",
      "required": ["status"]
    }
  }
}
```

7.14.5 Property definition

Table 36 defines the Properties that are part of the "oic.r.icemaker" Resource Type.

Table 36 – The Property definitions of the Resource with type "rt" = "oic.r.icemaker".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	string	Yes	Read Write	The status of the Ice Maker.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
status	multiple types: see schema	Yes	Read Write	Set the status of the Ice Maker.

7.14.6 CRUDN behaviour

Table 37 defines the CRUDN operations that are supported on the "oic.r.icemaker" Resource Type.

Table 37 – The CRUDN operations of the Resource with type "rt" = "oic.r.icemaker".

Create	Read	Update	Delete	Notify
	get	post		observe

7.15 Lock

7.15.1 Introduction

The Resource describing a lock.
The Property "lockState" is a string. The value 'Locked' indicates that the door is Locked.
The value 'Unlocked' indicates that the door is Unlocked.

7.15.2 Example URI

/LockStatusResURI

7.15.3 Resource type

The Resource Type is defined as: "oic.r.lock.status".

7.15.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Lock",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
```

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```
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockStatusResURI" : {
      "get": {
        "description": "The Resource describing a lock.\nThe Property \"lockState\" is a string. The
value 'Locked' indicates that the door is Locked.\nThe value 'Unlocked' indicates that the door is
Unlocked.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of the lock.",
              "x-example":
                {
                  "rt": ["oic.r.lock.status"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "lockState": "Locked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            }
        }
      },
      "post": {
        "description": "Sets the current lock state.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Lock" },
            "x-example":
              {
                "lockState": "Unlocked"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "lockState": "Unlocked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an invalid property value for \"lockState\".\nThe server responds with the current
resource representation.\n",
              "x-example":
                {
                  "lockState": "Unlocked"
                },
              "schema": { "$ref": "#/definitions/Lock" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
```

```
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Lock" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.lock.status"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lockState": {
          "description": "The state of the lock.",
          "enum": [
            "Locked",
            "Unlocked"
          ],
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["lockState"]
    }
  }
}
```

7.15.5 Property definition

Table 38 defines the Properties that are part of the "oic.r.lock.status" Resource Type.

Table 38 – The Property definitions of the Resource with type "rt" = "oic.r.lock.status".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
lockState	string	Yes	Read Write	The state of the lock.

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n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.15.6 CRUDN behaviour

Table 39 defines the CRUDN operations that are supported on the "oic.r.lock.status" Resource Type.

Table 39 – The CRUDN operations of the Resource with type "rt" = "oic.r.lock.status".

Create	Read	Update	Delete	Notify
	get	post		observe

7.16 Lock Code

7.16.1 Introduction

The Resource describing a lock code.
The Property "lockCodeList" is an array of possible codes that may be associated with a lock.
The codes are all presented as strings.

7.16.2 Example URI

/LockCodeResURI

7.16.3 Resource type

The Resource Type is defined as: "oic.r.lock.code".

7.16.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Lock Code",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LockCodeResURI" : {
      "get": {
        "description": "The Resource describing a lock code.\nThe Property \"lockCodeList\" is an
array of possible codes that may be associated with a lock.\nThe codes are all presented as
strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current lock code values.",
              "x-example":
                {
```

```
                "rt": ["oic.r.lock.code"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "lockCodeList": ["012345", "112233"]
              },
            "schema": { "$ref": "#/definitions/LockCode" }
          }
        }
      },
      "post": {
        "description": "Updates the current lock code values. e.g. all value in the property
\"lockCodeList\"",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/LockCode" },
            "x-example":
              {
                "lockCodeList": ["543210", "332211"]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "lockCodeList": ["543210", "332211"]
                },
              "schema": { "$ref": "#/definitions/LockCode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "LockCode" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.lock.code"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lockCodeList": {
          "items": {
            "description": "The value for the lock code.",
            "type": "string"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```

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```
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["lockCodeList"]
    }
  }
}
```

7.16.5 Property definition

Table 40 defines the Properties that are part of the "oic.r.lock.code" Resource Type.

Table 40 – The Property definitions of the Resource with type "rt" = "oic.r.lock.code".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
lockCodeList	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.16.6 CRUDN behaviour

Table 41 defines the CRUDN operations that are supported on the "oic.r.lock.code" Resource Type.

Table 41 – The CRUDN operations of the Resource with type "rt" = "oic.r.lock.code".

Create	Read	Update	Delete	Notify
	get	post		observe

7.17 Mode

7.17.1 Introduction

This Resource describes the modes of operation that a Device can provide.
The mode can be read or set.
The Property "supportedModes" is an array of possible modes the device supports.
The Property "modes" is an array of the currently active mode(s).

7.17.2 Example URI

/ModeResURI

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7.17.3 Resource type

The Resource Type is defined as: "oic.r.mode".

7.17.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Mode",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ModeResURI" : {
      "get": {
        "description": "This Resource describes the modes of operation that a Device can
provide.\nThe mode can be read or set.\nThe Property \"supportedModes\" is an array of possible
modes the device supports.\nThe Property \"modes\" is an array of the currently active mode(s).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current mode.",
              "x-example":
                {
                  "rt": ["oic.r.mode"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                  "modes": ["active"]
                },
              "schema": { "$ref": "#/definitions/Mode" }
            }
        }
      },
      "post": {
        "description": "Sets the desired mode.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ModeUpdate" },
            "x-example":
              {
                "modes": ["armedAway"]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "modes": ["armedAway"]
                }
                ,
              "schema": { "$ref": "#/definitions/ModeUpdate" }
            },
```

```
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an value for \"modes\" that is not found in \"supportedModes\".\nThe server responds
with the current resource representation.\n",
              "x-example":
                {
                  "supportedModes": ["active","armedAway","armedStay","armedInstant"],
                  "modes": ["active"]
                },
              "schema": { "$ref": "#/definitions/Mode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Mode" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.mode"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "modes": {
          "description": "The array of the currently active mode(s).",
          "items": {
            "type": "string"
          },
          "type": "array"
        },
        "supportedModes": {
          "description": "The array of possible modes the device supports.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
```

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```
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["supportedModes", "modes"]
    },
    "ModeUpdate" : {
      "properties": {
        "modes": {
          "description": "Desired mode",
          "items": {
            "type": "string"
          },
          "type": "array"
        }
      },
      "type": "object",
      "required": ["modes"]
    }
  }
}
```

7.17.5 Property definition

Table 42 defines the Properties that are part of the "oic.r.mode" Resource Type.

Table 42 – The Property definitions of the Resource with type "rt" = "oic.r.mode".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
modes	array: see schema	Yes	Read Write	The array of the currently active mode(s).
supportedModes	array: see schema	Yes	Read Only	The array of possible modes the device supports.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
modes	array: see schema	Yes	Read Write	Desired mode

7.17.6 CRUDN behaviour

Table 43 defines the CRUDN operations that are supported on the "oic.r.mode" Resource Type.

Table 43 – The CRUDN operations of the Resource with type "rt" = "oic.r.mode".

Create	Read	Update	Delete	Notify
	get	post		observe

7.18 Open Level

7.18.1 Introduction

This Resource describes how open or ajar an entity such as a window, door, blind or shutter is. The Property "openLevel" can be read (acting as a sensor).

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The "openLevel" can also be set (acting as an actuator).
The "openLevel" is device dependent across the range provided.
When the Property "range" is omitted then 0 to 100 is assumed where 0 means closed, 100 means fully open.
If a "range" is provided then the lower bound=closed, upper bound=open.
If Property "step" is present then it represents the increment between possible values; if not provided 1 is assumed.

7.18.2 Example URI

/OpenLevelResURI

7.18.3 Resource type

The Resource Type is defined as: "oic.r.openlevel".

7.18.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Open Level",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpenLevelResURI" : {
      "get": {
        "description": "This Resource describes how open or ajar an entity such as a window, door,
blind or shutter is.\nThe Property \"openLevel\" can be read (acting as a sensor).\nThe
\"openLevel\" can also be set (acting as an actuator).\nThe \"openLevel\" is device dependent across
the range provided.\nWhen the Property \"range\" is omitted then 0 to 100 is assumed where 0 means
closed, 100 means fully open.\nIf a \"range\" is provided then the lower bound=closed, upper
bound=open.\nIf Property \"step\" is present then it represents the increment between possible
values; if not provided 1 is assumed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current openLevel.",
              "x-example":
                {
                  "rt": ["oic.r.openlevel"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "openLevel": 50,
                  "step": 2,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            }
        }
      },
      "post": {
        "description": "Sets the desired openLevel.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
```

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```
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OpenLevel" },
            "x-example":
              {
                "openLevel": 0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "openLevel": 0
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an out of range property value for \"openLevel\".\nThe OCF Server responds with the
current resource representation.\n",
              "x-example":
                {
                  "openLevel": 50,
                  "step": 2,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/OpenLevel" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "OpenLevel" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.openlevel"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "openLevel": {
          "description": "How open or ajar the entity is.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
```

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```
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
          },
          "step": {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.a",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["openLevel"]
      }
    }
}
```

7.18.5 Property definition

Table 44 defines the Properties that are part of the "oic.r.openlevel" Resource Type.

Table 44 – The Property definitions of the Resource with type "rt" = "oic.r.openlevel".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
openLevel	integer	Yes	Read Write	How open or ajar the entity is.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.18.6 CRUDN behaviour

Table 45 defines the CRUDN operations that are supported on the "oic.r.openlevel" Resource Type.

Table 45 – The CRUDN operations of the Resource with type "rt" = "oic.r.openlevel".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.19 Operational State

7.19.1 Introduction

This Resource describes the operational and job states on a device.
The states can be read or set, setting indicates a desired state.
A device may reject an attempt to set a state that would result
in adverse operational characteristics.
The Property "machineStates" is an array of the possible operational states.
The Property "currentMachineState" is the current state of operation of the device.
The Property "jobStates" is an array of the possible job states.
The Property "currentJobState" is the currently active jobState.
The Property "runningTime" is the ISO8601 encoded elapsed time in the current operational state.
The Property "remainingTime" is the ISO8601 encoded time till completion of the current operational state.
The Property "progressPercentage" is the percentage completeness of the current jobState.

7.19.2 Example URI

/OperationalStateResURI

7.19.3 Resource type

The Resource Type is defined as: "oic.r.operational.state".

7.19.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Operational State",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OperationalStateResURI": {
      "get": {
        "description": "This Resource describes the operational and job states on a device.\nThe
states can be read or set, setting indicates a desired state.\nA device may reject an attempt to set
a state that would result\nin adverse operational characteristics.\nThe Property \"machineStates\"
is an array of the possible operational states.\nThe Property \"currentMachineState\" is the current
state of operation of the device.\nThe Property \"jobStates\" is an array of the possible job
states.\nThe Property \"currentJobState\" is the currently active jobState.\nThe Property
\"runningTime\" is the ISO8601 encoded elapsed time in the current operational state.\nThe Property
\"remainingTime\" is the ISO8601 encoded time till completion of the current operational state.\nThe
Property \"progressPercentage\" is the percentage completeness of the current jobState.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current operational and job states.",
            "x-example": {
              "rt": ["oic.r.operational.state"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "machineStates": ["pause", "stopped", "idle", "active"],
              "currentMachineState": "active",
```

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```
              "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry", "wrinklePrevent"],
              "currentJobState": "rinse",
              "runningTime": "PT15M20S",
              "remainingTime": "PT10M40S",
              "progressPercentage": 75
            },
            "schema": { "$ref": "#/definitions/Operation" }
          }
        }
      },
      "post": {
        "description": "Sets the desired operational or job state.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OperationUpdate" },
            "x-example": {
              "currentMachineState": "pause",
              "currentJobState": "wash"
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "currentMachineState": "pause",
              "currentJobState": "wash"
            },
            "schema": { "$ref": "#/definitions/OperationUpdate" }
          },
          "403": {
            "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an value for \"currentMachineState\" that is not found in\"machineStates\".\n  An
UPDATE with an value for \"currentJobState\" that is not found in \"jobStates\".\nThe OCF Server
responds with the current resource representation.\n",
            "x-example": {
              "machineStates": ["pause", "stopped", "idle", "active"],
              "currentMachineState": "active",
              "jobStates": ["preWash", "wash", "rinse", "spin", "dry", "airDry", "wrinklePrevent"],
              "currentJobState": "rinse",
              "runningTime": "PT15M20S",
              "remainingTime": "PT10M40S",
              "progressPercentage": 75
            },
            "schema": { "$ref": "#/definitions/Operation" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Operation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.operational.state"],
            "maxLength": 64,
            "type": "string"
          },
```

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```
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "currentMachineState": {
          "description": "The current state of operation of the device.",
          "type": "string"
        },
        "currentJobState": {
          "description": "The currently active jobState.",
          "type": "string"
        },
        "machineStates": {
          "description": "The array of the possible operational states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "runningTime": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "remainingTime": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "progressPercentage": {
          "description": "The percentage completeness of the current jobState.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "jobStates": {
          "description": "The Array of the possible job states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["machineStates", "currentMachineState"]
    },
```

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```
    "OperationUpdate" : {
      "properties": {
         "currentMachineState": {
          "description": "The current state of operation of the device.",
          "type": "string"
        },
        "currentJobState": {
          "description": "THe currently active jobState.",
          "type": "string"
        }
      },
      "type": "object"
    }
  }
}
```

7.19.5 Property definition

Table 46 defines the Properties that are part of the "oic.r.operational.state" Resource Type.

Table 46 – The Property definitions of the Resource with type "rt" = "oic.r.operational.state".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
currentMachineState	string	Yes	Read Write	The current state of operation of the device.
currentJobState	string	No	Read Write	The currently active jobState.
machineStates	array: see schema	Yes	Read Only	The array of the possible operational states.
runningTime	multiple types: see schema	No	Read Write	
remainingTime	multiple types: see schema	No	Read Write	
progressPercentage	integer	No	Read Only	The percentage completeness of the current jobState.
jobStates	array: see schema	No	Read Only	The Array of the possible job states.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
currentMachineState	string		Read Write	The current state of operation of the device.
currentJobState	string		Read Write	THe currently active jobState.

7.19.6 CRUDN behaviour

Table 47 defines the CRUDN operations that are supported on the "oic.r.operational.state" Resource Type.

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Table 47 – The CRUDN operations of the Resource with type "rt" = "oic.r.operational.state".

Create	Read	Update	Delete	Notify
	get	post		observe

7.20 Ramp Time

7.20.1 Introduction

This Resource that describes the ramp time of a dimming function.
It specifies the actual speed of changing between 2 dimming values.
The Property "ramptime" is specified in milliseconds [ms].
When range is omitted the maximum value is 100 ms.
The ramp time of 0ms indicates the minimal delay possible by the implementation.

7.20.2 Example URI

/RampTimeResURI

7.20.3 Resource type

The Resource Type is defined as: "oic.r.light.ramptime".

7.20.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Ramp Time",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RampTimeResURI" : {
      "get": {
        "description": "This Resource that describes the ramp time of a dimming function.\nIt
specifies the actual speed of changing between 2 dimming values.\nThe Property \"ramptime\" is
specified in milliseconds [ms].\nWhen range is omitted the maximum value is 100 ms.\nThe ramp time
of 0ms indicates the minimal delay possible by the implementation.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current RampTime.",
              "x-example":
                {
                  "rt": ["oic.r.light.ramptime"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "rampTime": 40,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/RampTime" }
            }
        }
      },
      "post": {
        "description": "Sets the current RampTime.\n",
        "parameters": [
```

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```
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/RampTime" },
            "x-example":
              {
                "rampTime": 50
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "This response is generated by the OCF Server when the client sends an
UPDATE with an in range Property value for \"rampTime\". The OCF Server responds with the current
resource representation.",
              "x-example":
                {
                  "rampTime": 50,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/RampTime" }
            },
            "403": {
              "description" : "Error response. This response is generated by the OCF Server when the
client sends an UPDATE with an out of range Property value for \"rampTime\".",
              "x-example":
                {
                  "rampTime": 40,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/RampTime" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "RampTime" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.ramptime"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rampTime" :
                {
          "description": "The actual speed of changing between 2 dimming values.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
```

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```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "range": {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
          },
          "step": {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
          },
          "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.a",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["rampTime"]
      }
    }
}
```

7.20.5 Property definition

Table 48 defines the Properties that are part of the "oic.r.light.ramptime" Resource Type.

Table 48 – The Property definitions of the Resource with type "rt" = "oic.r.light.ramptime".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
rampTime	integer	Yes	Read Write	The actual speed of changing between 2 dimming values.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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7.20.6 CRUDN behaviour

Table 49 defines the CRUDN operations that are supported on the "oic.r.light.ramptime" Resource Type.

Table 49 – The CRUDN operations of the Resource with type "rt" = "oic.r.light.ramptime".

Create	Read	Update	Delete	Notify
	get	post		observe

7.21 Refrigeration

7.21.1 Introduction

This Resource describes a refrigeration function.
The Property "filter" is a read-only value providing the percentage life time remaining for the water filter.
The Property "rapidFreeze" is a boolean that controls the rapid freeze capability if present.
The Property "rapidCool" is a boolean that controls the rapid cool capability if present.
The Property "defrost" is a boolean that controls the defrost cycle if present.
At least one of the listed Properties shall be present in a Resource Instance.

7.21.2 Example URI

/RefrigerationResURI

7.21.3 Resource type

The Resource Type is defined as: "oic.r.refrigeration".

7.21.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Refrigeration",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RefrigerationResURI" : {
      "get": {
        "description": "This Resource describes a refrigeration function.\nThe Property \"filter\"
is a read-only value providing the percentage life time remaining for the water filter.\nThe
Property \"rapidFreeze\" is a boolean that controls the rapid freeze capability if present.\nThe
Property \"rapidCool\" is a boolean that controls the rapid cool capability if present.\nThe
Property \"defrost\" is a boolean that controls the defrost cycle if present.\nAt least one of the
listed Properties shall be present in a Resource Instance.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current Refrigeration function status; all Properties
supported by the Device are returned.",
              "x-example":
                {
                  "rt": ["oic.r.refrigeration"],
```

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```
                "if": ["oic.if.a", "oic.if.baseline"],
                "filter": 75,
                "rapidFreeze": false,
                "rapidCool": false,
                "defrost": true
              },
            "schema": { "$ref": "#/definitions/Refrigeration" }
          }
        }
      },
      "post": {
        "description": "Activates the desired Refrigeration functions.\nSuported values are
\"rapidFreeze\", \"rapidCool\" and \"defrost\".\nAt least on of the supported values shall be
provided.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/RefrigerationUpdate" },
            "x-example":
              {
                "rapidFreeze": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the Refrigeration function was changed.\nThe new
status can be provided in the response.\n",
              "x-example":
                {
                  "rapidFreeze": true
                },
              "schema": { "$ref": "#/definitions/RefrigerationUpdate" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Refrigeration" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.refrigeration"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rapidFreeze": {
          "description": "Indicates whether the unit has a rapid freeze capability active.",
          "type": "boolean"
        },
        "defrost": {
          "description": "Indicates whether a defrost cycle is currently active.",
          "type": "boolean"
        },
```

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```
        "filter": {
          "description": "Percentage life time remaining for the water filter.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "rapidCool": {
          "description": "Indicates whether the unit has a rapid cool capability active.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "anyOf": [
          {
            "required": ["filter"]
          },
          {
            "required": ["rapidFreeze"]
          },
          {
            "required": ["rapidCool"]
          },
          {
            "required": ["defrost"]
          }
        ],
        "type": "object"
    },
    "RefrigerationUpdate": {
      "properties": {
         "rapidFreeze": {
          "description": "Indicates whether the unit has a rapid freeze capability active.",
          "type": "boolean"
        },
        "defrost": {
          "description": "Indicates whether a defrost cycle is currently active.",
          "type": "boolean"
        },
        "rapidCool": {
          "description": "Indicates whether the unit has a rapid cool capability active.",
          "type": "boolean"
        }
      },
      "anyOf": [
          {
            "required": ["rapidFreeze"]
          },
          {
            "required": ["rapidCool"]
```

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```
          },
          {
            "required": ["defrost"]
          }
      ],
      "type": "object"
    }
  }
}
```

7.21.5 Property definition

Table 50 defines the Properties that are part of the "oic.r.refrigeration" Resource Type.

Table 50 – The Property definitions of the Resource with type "rt" = "oic.r.refrigeration".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
rapidFreeze	boolean	No	Read Write	Indicates whether the unit has a rapid freeze capability active.
defrost	boolean	Yes	Read Write	Indicates whether a defrost cycle is currently active.
filter	integer	No	Read Only	Percentage life time remaining for the water filter.
rapidCool	boolean	No	Read Write	Indicates whether the unit has a rapid cool capability active.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
rapidFreeze	boolean	No	Read Write	Indicates whether the unit has a rapid freeze capability active.
defrost	boolean	Yes	Read Write	Indicates whether a defrost cycle is currently active.
rapidCool	boolean	No	Read Write	Indicates whether the unit has a rapid cool capability active.

7.21.6 CRUDN behaviour

Table 51 defines the CRUDN operations that are supported on the "oic.r.refrigeration" Resource Type.

Table 51 – The CRUDN operations of the Resource with type "rt" = "oic.r.refrigeration".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.22 Temperature

7.22.1 Introduction

This Resource describes a sensed or actuated Temperature value.
The Property "temperature" describes the current value measured.
The Property "units" is a single value that is one of "C", "F" or "K".
It provides the unit of measurement for the "temperature" value.
It is a read-only value that is provided by the server.
If the "units" Property is missing the default is Celsius [C].
When the Property "range" is omitted the default is +/- MAXINT.
A client can specify the units for the requested temperature by use of a query parameter.
If no query parameter is provided the server provides its default measure or set value.
It is recommended to return always the units Property in the result.

7.22.2 Example URI

/TemperatureResURI

7.22.3 Resource type

The Resource Type is defined as: "oic.r.temperature".

7.22.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Temperature",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TemperatureResURI" : {
      "get": {
        "description": "This Resource describes a sensed or actuated Temperature value.\nThe
Property \"temperature\" describes the current value measured.\nThe Property \"units\" is a single
value that is one of \"C\", \"F\" or \"K\".\nIt provides the unit of measurement for the
\"temperature\" value.\nIt is a read-only value that is provided by the server.\nIf the \"units\"
Property is missing the default is Celsius [C].\nWhen the Property \"range\" is omitted the default
is +/- MAXINT.\nA client can specify the units for the requested temperature by use of a query
parameter.\nIf no query parameter is provided the server provides its default measure or set
value.\nIt is recommended to return always the units Property in the result.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {"$ref": "#/parameters/unit"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current temperature value.",
              "x-example":
                {
                  "rt": ["oic.r.temperature"],
                  "if": [ "oic.if.a", "oic.if.baseline"],
                  "temperature": 20.0,
                  "units": "C"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
```

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```
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
A RETRIEVE with queryParameter indicating a unit that the server does not support.\nThe server
responds with the current resource representation including the\n\"units\" property illustrating the
supported units and the error.",
              "x-example":
                {
                  "temperature": 20.0,
                  "units": "C"
                },
              "schema": { "$ref": "#/definitions/Temperature" }
            }
        }
      },
      "post": {
        "description": "Sets the desired temperature value.\nIf a \"unit\" is included and the
server may not support the unit indicated the request will fail.\nIf the units are omitted value is
taken to be in C.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Temperature" },
            "x-example":
              {
                "temperature": 18.0,
                "units": "F"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "temperature": 18.0,
                  "units": "F"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            },
            "403": {
              "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an out of range property value for temperature.\n  An UPDATE with an unsupported unit
for this server.\nThe OCF Server responds with the current resource representation including\nthe
\"range\" property illustrating the supported range and the error.",
              "x-example":
                {
                  "temperature": 20.0,
                  "units": "C"
                }
                ,
              "schema": { "$ref": "#/definitions/Temperature" }
            }
        }
      }
    }
  },
  "parameters": {
        "interface" : {
            "in" : "query",
            "name" : "if",
            "type" : "string",
            "enum" : ["oic.if.a", "oic.if.s", "oic.if.baseline"]
        },
        "unit" :  {
            "in": "query",
            "description": "Units",
            "type": "string",
```

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```
            "enum": ["C", "F", "K"],
            "name": "units",
            "x-queryexample" : "/TemperatureResURI?units=C"
        }
  },
  "definitions": {
    "Temperature" : {
        "properties": {
            "rt" : {
              "description": "The Resource Type.",
              "items": {
                "maxLength": 64,
                "type": "string",
                "enum": ["oic.r.temperature"]
              },
              "minItems": 1,
              "uniqueItems": true,
              "readOnly": true,
              "type": "array"
            },
            "temperature" : {
              "description": "The current temperature setting or measurement.",
              "type": "number"
            },
            "units" :  {
              "description": "The unit for the conveyed temperature value, Note that when doing an
UPDATE, the unit on the device does NOT change, it only indicates the unit of the conveyed value
during the UPDATE operation.",
              "enum": [
                "C",
                "F",
                "K"
              ],
              "type": "string"
            },
            "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
            },
            "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
            },
            "range" :  {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
            },
            "step" : {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
            },
            "precision" : {
              "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
            },
            "if" : {
              "description": "The OCF Interface set supported by this Resource.",
              "items": {
                "enum": [
                  "oic.if.baseline",
                  "oic.if.s",
                  "oic.if.a"
                ],
                "maxLength": 64,
                "type": "string"
              },
              "minItems": 2,
```

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```
                "uniqueItems": true,
                "readOnly": true,
                "type": "array"
            }
        },
        "type" : "object",
        "required": ["temperature"]
    }
  }
}
```

7.22.5 Property definition

Table 52 defines the Properties that are part of the "oic.r.temperature" Resource Type.

Table 52 – The Property definitions of the Resource with type "rt" = "oic.r.temperature".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
temperature	number	Yes	Read Write	The current temperature setting or measurement.
units	string	No	Read Write	The unit for the conveyed temperature value, Note that when doing an UPDATE, the unit on the device does NOT change, it only indicates the unit of the conveyed value during the UPDATE operation.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.22.6 CRUDN behaviour

Table 53 defines the CRUDN operations that are supported on the "oic.r.temperature" Resource Type.

Table 53 – The CRUDN operations of the Resource with type "rt" = "oic.r.temperature".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.23 Time Period

7.23.1 Introduction

This Resource describes the time period over which any additionally provided information is derived or bounded.
The Property "startTime" and "stopTime" are RFC3339 encoded strings. The Property "startTime" must be present.
The interval is the interval of the time period in minutes, if present this value must be no less than 0 minute.
The intervalsecond is the interval of the time period in seconds, if present this value must be numerical zero or greater.
The repeat is the number of the time period's iteration, which means how many times to repeat the time period. The Property "repeat" accepts only negative one, numerical zero, and positive number. When this value is numerical zero, the time period will be repeated infinitely until a client makes it stop by inputting negative one for the value.
The Property "stoptime" and "interval" are mutually exclusive; both Properties cannot be present in a Resource instance.
The Property "intervalsecond" cannot be presented with the Property "stopTime". In case of both the Property "interval" and "intervalsecond" are presented together, the total time interval is the sum of "interval" and "intervalsecond".
The Property "triggertiming" describes a specific time to execute an action. This property must have one of the values among "startTime", "stopTime", and "totalInterval". The totalInterval means the sum of the Property "interval" and "intervalsecond". If one of the properties does not exist, the value of the unexpressed property is taken as a numerical zero.
The Property "state" describes a state of time interval. This property must have one of the values among "preInterval", "inInterval", and "postInterval".
The Resource defines a time period for information retrieval, action or other behaviour.

7.23.2 Example URI

/TimePeriodResURI

7.23.3 Resource type

The Resource Type is defined as: "oic.r.time.period".

7.23.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Time Period",
    "version": "20191001",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimePeriodResURI" : {
      "get": {
        "description": "This Resource describes the time period over which any additionally provided
information is derived or bounded.\nThe Property \"startTime\" and \"stopTime\" are RFC3339 encoded
strings. The Property \"startTime\" must be present.\nThe interval is the interval of the time
period in minutes, if present this value must be no less than 0 minute.\nThe intervalsecond is the
interval of the time period in seconds, if present this value must be numerical zero or
greater.\nThe repeat is the number of the time period's iteration, which means how many times to
```

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```
repeat the time period. The Property \"repeat\" accepts only negative one, numerical zero, and
positive number. When this value is numerical zero, the time period will be repeated infinitely
until a client makes it stop by inputting negative one for the value.\nThe Property \"stoptime\" and
\"interval\" are mutually exclusive; both Properties cannot be present in a Resource instance.\nThe
Property \"intervalsecond\" cannot be presented with the Property \"stopTime\". In case of both the
Property \"interval\" and \"intervalsecond\" are presented together, the total time interval is the
sum of \"interval\" and \"intervalsecond\".\nThe Property \"triggertiming\" describes a specific
time to execute an action. This property must have one of the values among \"startTime\",
\"stopTime\", and \"totalInterval\". The totalInterval means the sum of the Property \"interval\"
and \"intervalsecond\". If one of the properties does not exist, the value of the unexpressed
property is taken as a numerical zero.\nThe Property \"state\" describes a state of time interval.
This property must have one of the values among \"preInterval\", \"inInterval\", and
\"postInterval\".\nThe Resource defines a time period for information retrieval, action or other
behaviour.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.time.period"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "startTime":"2015-01-09T14:30:00Z",
                  "stopTime": "2015-01-09T14:45:00Z"
                },
              "schema": { "$ref": "#/definitions/TimePeriod" }
            }
        }
      },
      "post": {
        "description": "Sets or updates a time period for information retrieval, action or other
behavior.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/TimePeriod" },
            "x-example":
              {
                "startTime":"2015-01-09T14:30:00Z",
                "stopTime": "2015-01-09T14:45:00Z"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "startTime":"2015-01-09T14:30:00Z",
                  "stopTime": "2015-01-09T14:45:00Z"
                },
              "schema": { "$ref": "#/definitions/TimePeriod" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "TimePeriod" : {
```

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```
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.time.period"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "interval": {
          "description": "The time interval in minutes after the \"startTime\", if present the
Property \"stopTime\" cannot be present.",
          "type": "integer",
          "minimum": 0
        },
        "intervalsecond": {
          "description": "The time interval in seconds after the \"startTime\", if present the
Property \"stopTime\" cannot be present.",
          "type": "integer",
          "minimum": 0
        },
        "stopTime": {
          "description": "The stop time for the time period, if present the Property \"interval\" or
\"intervalsecond\" cannot be present.",
          "type": "string",
          "format": "date-time"
        },
        "startTime": {
          "description": "The start time for the time period.",
          "type": "string",
          "format": "date-time"
        },
        "repeat": {
          "description": "The number of times to repeat the time period",
          "type": "integer",
          "minimum": -1
        },
        "triggertiming": {
          "description": "The desired timing to trigger an action execution",
          "type": "string",
          "enum": [
            "startTime",
            "stopTime",
            "totalInterval"
          ]
        },
        "state": {
          "description": "The current state of the time interval",
          "type": "string",
          "readOnly": true,
          "enum": [
            "preInterval",
            "inInterval",
            "postInterval"
          ]
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
```

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```
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["startTime"]
    }
  }
}
```

7.23.5 Property definition

Table 54 defines the Properties that are part of the "oic.r.time.period" Resource Type.

Table 54 – The Property definitions of the Resource with type "rt" = "oic.r.time.period".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
interval	integer	No	Read Write	The time interval in minutes after the "startTime", if present the Property "stopTime" cannot be present.
intervalsecond	integer	No	Read Write	The time interval in seconds after the "startTime", if present the Property "stopTime" cannot be present.
stopTime	string	No	Read Write	The stop time for the time period, if present the Property "interval" or "intervalsecond" cannot be present.
startTime	string	Yes	Read Write	The start time for the time period.
Repeat	integer	No	Read Write	The number of times to repeat the time period
triggertiming	string	No	Read Write	The desired timing to trigger an action execution
State	string	No	Read Only	The current state of the time interval
n	multiple types: see schema	No	Read Write	
Id	multiple types: see schema	No	Read Write	
If	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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7.23.6 CRUDN behaviour

Table 55 defines the CRUDN operations that are supported on the "oic.r.time.period" Resource Type.

Table 55 – The CRUDN operations of the Resource with type "rt" = "oic.r.time.period".

Create	Read	Update	Delete	Notify
	get	post		observe

7.24 Activity Count

7.24.1 Introduction

This Resource specifies an activity count.
The Resource can be readonly (oic.if.s interface) in which instance it represents a count.
The Resource can be readwrite (oic.if.a interface) in which instance it represents a goal or target for a count.
The Property "count" is an integer representing either the current count or goal value.

7.24.2 Example URI

/ActivityCountResURI

7.24.3 Resource type

The Resource Type is defined as: "oic.r.sensor.activity.count".

7.24.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Activity Count",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ActivityCountResURI" : {
      "get": {
        "description": "This Resource specifies an activity count.\nThe Resource can be readonly
(oic.if.s interface) in which instance it represents a count.\nThe Resource can be readwrite
(oic.if.a interface) in which instance it represents a goal or target for a count.\nThe Property
\"count\" is an integer representing either the current count or goal value.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.activity.count"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "count": 2500
                },
              "schema": { "$ref": "#/definitions/Count" }
            }
```

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```
        }
      },
      "post": {
        "description": "Sets the \"count\" target.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Count" },
            "x-example":
              {
                "count": 5000
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "count": 5000
                },
              "schema": { "$ref": "#/definitions/Count" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Count" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.activity.count"]
          },
          "minItems": 1,
          "uniqueItems" : true,
          "readOnly": true,
          "type": "array"
        },
        "count": {
          "description": "The current or Target count.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
```

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```
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["count"]
    }
  }
}
```

7.24.5 Property definition

Table 56 defines the Properties that are part of the "oic.r.sensor.activity.count" Resource Type.

Table 56 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.activity.count".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
count	integer	Yes	Read Write	The current or Target count.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.24.6 CRUDN behaviour

Table 57 defines the CRUDN operations that are supported on the "oic.r.sensor.activity.count" Resource Type.

Table 57 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.activity.count".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.25 Atmospheric Pressure Sensor

7.25.1 Introduction

This Resource provides a measurement of Mean Sea Level Pressure experienced at the measuring point expressed in millibars.
The Property "atmosphericPressure" is a float which describes the atmospheric pressure in hPa (hectoPascals).
Note that hPa and the also commonly used unit of millibars (mbar) are numerically equivalent.

7.25.2 Example URI

/AtmosphericPressureResURI

7.25.3 Resource type

The Resource Type is defined as: "oic.r.sensor.atmosphericpressure".

7.25.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Atmospheric Pressure Sensor",
    "version": "20190225",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AtmosphericPressureResURI" : {
      "get": {
        "description": "This Resource provides a measurement of Mean Sea Level Pressure experienced
at the measuring point expressed in millibars.\nThe Property \"atmosphericPressure\" is a float
which describes the atmospheric pressure in hPa (hectoPascals).\nNote that hPa and the also commonly
used unit of millibars (mbar) are numerically equivalent.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.atmosphericpressure"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "atmosphericPressure": 1000.4
                },
              "schema": { "$ref": "#/definitions/atmosphericPressure" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
```

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```
  "definitions": {
    "atmosphericPressure" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.atmosphericpressure"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "atmosphericPressure": {
          "description": "The current atmospheric pressure in hPa.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["atmosphericPressure"]
    }
  }
}
```

7.25.5 Property definition

Table 58 defines the Properties that are part of the "oic.r.sensor.atmosphericpressure" Resource Type.

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Table 58 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.atmosphericpressure".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
atmosphericPressure	number	Yes	Read Only	The current atmospheric pressure in hPa.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.25.6 CRUDN behaviour

Table 59 defines the CRUDN operations that are supported on the "oic.r.sensor.atmosphericpressure" Resource Type.

Table 59 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.atmosphericpressure".

Create	Read	Update	Delete	Notify
	get			observe

7.26 Audio Controls

7.26.1 Introduction

This Resource defines basic audio control functions.
The Property "volume" is an integer containing a percentage [0,100].
A volume of 0 (zero) means no sound produced.
A volume of 100 means maximum sound production.
The Property "mute" is implemented as a boolean.
A mute value of true means that the device is muted (no audio).
A mute value of false means that the device is not muted (audio).

7.26.2 Example URI

/AudioResURI

7.26.3 Resource type

The Resource Type is defined as: "oic.r.audio".

7.26.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Audio Controls",
    "version": "20190620",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AudioResURI" : {
      "get": {
        "description": "This Resource defines basic audio control functions.\nThe Property
\"volume\" is an integer containing a percentage [0,100].\nA volume of 0 (zero) means no sound
produced.\nA volume of 100 means maximum sound production.\nThe Property \"mute\" is implemented as
a boolean.\nA mute value of true means that the device is muted (no audio).\nA mute value of false
means that the device is not muted (audio).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.audio"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "volume": 50,
                  "mute": false
                },
              "schema": { "$ref": "#/definitions/Audio" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Audio-update" },
            "x-example":
              {
                "volume": 75
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "volume": 75,
                  "mute": false
                },
              "schema": { "$ref": "#/definitions/Audio" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
```

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```
    }
  },
  "definitions": {
    "Audio" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.audio"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mute": {
          "description": "The mute setting of an audio rendering device.",
          "type": "boolean"
        },
        "volume": {
          "description": "The volume setting of an audio rendering device.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["volume", "mute"]
    },
    "Audio-update" : {
      "properties": {
        "mute": {
          "description": "The mute setting of an audio rendering device.",
          "type": "boolean"
        },
        "volume": {
```

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```
          "description": "The volume setting of an audio rendering device.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      }
    }
  }
}
```

7.26.5 Property definition

Table 60 defines the Properties that are part of the "oic.r.audio" Resource Type.

Table 60 – The Property definitions of the Resource with type "rt" = "oic.r.audio".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
mute	boolean	Yes	Read Write	The mute setting of an audio rendering device.
volume	integer	Yes	Read Write	The volume setting of an audio rendering device.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
mute	boolean		Read Write	The mute setting of an audio rendering device.
volume	integer		Read Write	The volume setting of an audio rendering device.

7.26.6 CRUDN behaviour

Table 61 defines the CRUDN operations that are supported on the "oic.r.audio" Resource Type.

Table 61 – The CRUDN operations of the Resource with type "rt" = "oic.r.audio".

Create	Read	Update	Delete	Notify
	get	post		observe

7.27 Auto Focus

7.27.1 Introduction

This Resource describes an auto focus on/off feature.
The Property "autoFocus" is a boolean.
An "autoFocus" value of 'true' means that the auto focus feature is on.
An "autoFocus" value of 'false' means that the auto focus feature is off.

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Note that when Pan Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the autofocus works only in the selected area.

7.27.2 Example URI

/AutoFocusResURI

7.27.3 Resource type

The Resource Type is defined as: "oic.r.autofocus".

7.27.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Auto Focus",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoFocusResURI" : {
      "get": {
        "description": "This Resource describes an auto focus on/off feature.\nThe Property
\"autoFocus\" is a boolean.\nAn \"autoFocus\" value of 'true' means that the auto focus feature is
on.\nAn \"autoFocus\" value of 'false' means that the auto focus feature is off.\nNote that when Pan
Tilt Zoom (see 'Pan Tilt Zoom' Resource definition) is used the autofocus works only in the selected
area.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.autofocus"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "autoFocus": false
                },
              "schema": { "$ref": "#/definitions/AutoFocus" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/AutoFocus" },
            "x-example":
              {
                "autoFocus": true
              }
          }
        ],
        "responses": {
            "200": {
```

```
              "description" : "",
              "x-example":
                {
                  "autoFocus": true
                },
              "schema": { "$ref": "#/definitions/AutoFocus" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AutoFocus" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.autofocus"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "autoFocus": {
          "description": "The status of the Auto Focus feature.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["autoFocus"]
    }
  }
}
```

7.27.5 Property definition

Table 62 defines the Properties that are part of the "oic.r.autofocus" Resource Type.

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Table 62 – The Property definitions of the Resource with type "rt" = "oic.r.autofocus".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
autoFocus	boolean	Yes	Read Write	The status of the Auto Focus feature.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.27.6 CRUDN behaviour

Table 63 defines the CRUDN operations that are supported on the "oic.r.autofocus" Resource Type.

Table 63 – The CRUDN operations of the Resource with type "rt" = "oic.r.autofocus".

Create	Read	Update	Delete	Notify
	get	post		observe

7.28 Automatic Document Feeder

7.28.1 Introduction

This Resource describes the state of an automatic document feeder, typically used with a scanner.
The Property "adfstates" and "currentAdfState" are read only.
The Property "adfStates" is an array of the possible operational states.
The Property "adfProcessing" is the OK state, other states are errors or require 'user attention'.
The currentAdfState is the current value of the ADF state on the device.

7.28.2 Example URI

/AutomaticDocumentFeederResURI

7.28.3 Resource type

The Resource Type is defined as: "oic.r.automaticdocumentfeeder".

7.28.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
     "title": "Automatic Document Feeder",
     "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutomaticDocumentFeederResURI" : {
      "get": {
        "description": "This Resource describes the state of an automatic document feeder, typically
```

```
used with a scanner.\nThe Property \"adfstates\" and \"currentAdfState\" are read only.\nThe
Property \"adfStates\" is an array of the possible operational states.\nThe Property
\"adfProcessing\" is the OK state, other states are errors or require 'user attention'.\nThe
currentAdfState is the current value of the ADF state on the device.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.automaticdocumentfeeder"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "adfStates": ["adfProcessing", "adfEmpty", "adfJam", "adfLoaded", "adfMispick",
"adfHatchOpen", "adfDuplexPageTooShort", "adfDuplexPageTooLong", "adfMultipickDetected",
"adfInputTrayFailed", "adfInputTrayOverloaded"],
                  "currentAdfState": "adfProcessing"
                },
              "schema": { "$ref": "#/definitions/AutomaticDocumentFeeder" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AutomaticDocumentFeeder" : {
      "properties": {
         "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.automaticdocumentfeeder"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "adfStates": {
          "description": "The array of the possible adf states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "currentAdfState": {
          "description": "The current adf state.",
          "readOnly": true,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
```

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```
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["adfStates", "currentAdfState"]
    }
  }
}
```

7.28.5 Property definition

Table 64 defines the Properties that are part of the "oic.r.automaticdocumentfeeder" Resource Type.

Table 64 – The Property definitions of the Resource with type "rt" = "oic.r.automaticdocumentfeeder".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
adfStates	array: see schema	Yes	Read Only	The array of the possible adf states.
currentAdfState	string	Yes	Read Only	The current adf state.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.28.6 CRUDN behaviour

Table 65 defines the CRUDN operations that are supported on the "oic.r.automaticdocumentfeeder" Resource Type.

Table 65 – The CRUDN operations of the Resource with type "rt" = "oic.r.automaticdocumentfeeder".

Create	Read	Update	Delete	Notify
	get			observe

7.29 Button Switch

7.29.1 Introduction

This Resource describes the operation of a button style switch.
The Property "value" is a boolean.
A value of 'true' means that the button is being pushed/pressed.
A value of 'false' means that the button is not being pushed/pressed.

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7.29.2 Example URI

/ButtonResURI

7.29.3 Resource type

The Resource Type is defined as: "oic.r.button".

7.29.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Button Switch",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ButtonResURI" : {
      "get": {
        "description": "This Resource describes the operation of a button style switch.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that the button is being
pushed/pressed.\nA value of 'false' means that the button is not being pushed/pressed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.button"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                }
                ,
              "schema": { "$ref": "#/definitions/Button" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Button" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.button"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
```

```
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The status of the button",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.29.5 Property definition

Table 66 defines the Properties that are part of the "oic.r.button" Resource Type.

Table 66 – The Property definitions of the Resource with type "rt" = "oic.r.button".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The status of the button
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.29.6 CRUDN behaviour

Table 67 defines the CRUDN operations that are supported on the "oic.r.button" Resource Type.

Table 67 – The CRUDN operations of the Resource with type "rt" = "oic.r.button".

Create	Read	Update	Delete	Notify
	get			observe

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7.30 Carbon Dioxide Sensor

7.30.1 Introduction

This Resource describes whether carbon dioxide has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that carbon dioxide has been detected.
A value of 'false' means that carbon dioxide has not been detected.

7.30.2 Example URI

/CarbonDioxideResURI

7.30.3 Resource type

The Resource Type is defined as: "oic.r.sensor.carbondioxide".

7.30.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Dioxide Sensor",
    "version": "20191118",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonDioxideResURI" : {
      "get": {
        "description": "This Resource describes whether carbon dioxide has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that carbon dioxide has been detected.\nA
value of 'false' means that carbon dioxide has not been detected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":    ["oic.r.sensor.carbondioxide"],
                  "id":    "unique_example_id",
                  "value": true
                },
              "schema": { "$ref": "#/definitions/CO2" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CO2": {
      "properties": {
```

```
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.carbondioxide"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "value":  {
          "description": "The carbon dioxide indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units are in ppm",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

7.30.5 Property definition

Table 68 defines the Properties that are part of the "oic.r.sensor.carbondioxide" Resource Type.

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Table 68 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.carbondioxide".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	The carbon dioxide indicator, true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, units are in ppm
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.30.6 CRUDN behaviour

Table 69 defines the CRUDN operations that are supported on the "oic.r.sensor.carbondioxide" Resource Type.

Table 69 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.carbondioxide".

Create	Read	Update	Delete	Notify
	get			observe

7.31 Carbon Monoxide Sensor

7.31.1 Introduction

This Resource describes whether carbon monoxide has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that carbon monoxide has been detected.
A value of 'false' means that carbon monoxide has not been detected.

7.31.2 Example URI

/CarbonMonoxideResURI

7.31.3 Resource type

The Resource Type is defined as: "oic.r.sensor.carbonmonoxide".

7.31.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Carbon Monoxide Sensor",
    "version": "20191118",
```

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```
    "license": {
     "name": "OCF Data Model License",
     "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
     "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
   },
   "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CarbonMonoxideResURI" : {
      "get": {
        "description": "This Resource describes whether carbon monoxide has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that carbon monoxide has been detected.\nA
value of 'false' means that carbon monoxide has not been detected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt":     ["oic.r.sensor.carbonmonoxide"],
                  "id":     "unique_example_id",
                  "value":  true
                },
              "schema": { "$ref": "#/definitions/CO" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CO": {
      "properties": {
        "rt":  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.carbonmonoxide"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "value":  {
          "description": "The carbon monoxide indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units are in ppm",
          "readOnly": true
        },
        "precision":  {
          "$ref":
```

```
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

7.31.5 Property definition

Table 70 defines the Properties that are part of the "oic.r.sensor.carbonmonoxide" Resource Type.

Table 70 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.carbonmonoxide".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
value	boolean	Yes	Read Only	The carbon monoxide indicator, true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, units are in ppm
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

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range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.31.6 CRUDN behaviour

Table 71 defines the CRUDN operations that are supported on the "oic.r.sensor.carbonmonoxide" Resource Type.

Table 71 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.carbonmonoxide".

Create	Read	Update	Delete	Notify
	get			observe

7.32 Auto White Balance

7.32.1 Introduction

This Resource describes an auto balance on/off feature.
The Property "autoWhiteBalance" is a boolean.
An AutoWhiteBalance value of 'true' means that the auto white balance feature is on.
An AutoWhiteBalance value of 'false' means that the auto white balance feature is off.

7.32.2 Example URI

/AutoWhiteBalanceResURI

7.32.3 Resource type

The Resource Type is defined as: "oic.r.colour.autowhitebalance".

7.32.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
     "title": "Auto White Balance",
     "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AutoWhiteBalanceResURI" : {
      "get": {
        "description": "This Resource describes an auto balance on/off feature.\nThe Property
\"autoWhiteBalance\" is a boolean.\nAn AutoWhiteBalance value of 'true' means that the auto white
balance feature is on.\nAn AutoWhiteBalance value of 'false' means that the auto white balance
feature is off.\n",
        "parameters": [
```

```
        {"$ref": "#/parameters/interface"}
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt": ["oic.r.colour.autowhitebalance"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "autoWhiteBalance": false
              },
            "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
          }
      }
    },
    "post": {
      "description": "",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/AutoWhiteBalance" },
          "x-example":
            {
              "autoWhiteBalance": true
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "autoWhiteBalance": true
              },
            "schema": { "$ref": "#/definitions/AutoWhiteBalance" }
          }
      }
    }
  }
},
"parameters": {
  "interface" : {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "AutoWhiteBalance" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.colour.autowhitebalance"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "autoWhiteBalance": {
        "description": "The status of the Auto White balance feature.",
        "type": "boolean"
      },
      "n": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["autoWhiteBalance"]
    }
  }
}
```

7.32.5 Property definition

Table 72 defines the Properties that are part of the "oic.r.colour.autowhitebalance" Resource Type.

Table 72 – The Property definitions of the Resource with type "rt" = "oic.r.colour.autowhitebalance".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
autoWhiteBalance	boolean	Yes	Read Write	The status of the Auto White balance feature.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.32.6 CRUDN behaviour

Table 73 defines the CRUDN operations that are supported on the "oic.r.colour.autowhitebalance" Resource Type.

Table 73 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.autowhitebalance".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.33 Colour Saturation

7.33.1 Introduction

This Resource describes a Colour saturation value.
The Property "colourSaturation" is an integer.
A "colourSaturation" has a range of [0,100].
A "colourSaturation" value of 0 means producing black and white images.
A "colourSaturation" value of 50 means producing device specific normal colour images.
A "colourSaturation" value of 100 means producing device very full colour images.

7.33.2 Example URI

/ColourSaturationResURI

7.33.3 Resource type

The Resource Type is defined as: "oic.r.colour.saturation".

7.33.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Saturation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourSaturationResURI" : {
      "get": {
        "description": "This Resource describes a Colour saturation value.\nThe Property
\"colourSaturation\" is an integer.\nA \"colourSaturation\" has a range of [0,100].\nA
\"colourSaturation\" value of 0 means producing black and white images.\nA \"colourSaturation\"
value of 50 means producing device specific normal colour images.\nA \"colourSaturation\" value of
100 means producing device very full colour images.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.saturation"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "colourSaturation": 50
                },
              "schema": { "$ref": "#/definitions/Saturation" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
```

```
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Saturation" },
            "x-example":
              {
                "colourSaturation": 60
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "colourSaturation": 60
                }
                ,
              "schema": { "$ref": "#/definitions/Saturation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Saturation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.saturation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "colourSaturation": {
          "description": "The colour saturation value.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["colourSaturation"]
    }
  }
}
```

7.33.5 Property definition

Table 74 defines the Properties that are part of the "oic.r.colour.saturation" Resource Type.

Table 74 – The Property definitions of the Resource with type "rt" = "oic.r.colour.saturation".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
colourSaturation	integer	Yes	Read Write	The colour saturation value.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.33.6 CRUDN behaviour

Table 75 defines the CRUDN operations that are supported on the "oic.r.colour.saturation" Resource Type.

Table 75 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.saturation".

Create	Read	Update	Delete	Notify
	get	post		observe

7.34 Contact Sensor

7.34.1 Introduction

This Resource describes whether a contact sensor has been tripped or not.
Typical use case is in Security Systems detecting window or door open.
The Property "value" is a boolean.
A value of 'true' means that contact has been broken (open).
A value of 'false' means that contact is in place (closed).

7.34.2 Example URI

/ContactResURI

7.34.3 Resource type

The Resource Type is defined as: "oic.r.sensor.contact".

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7.34.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Contact Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ContactResURI" : {
      "get": {
        "description": "This Resource describes whether a contact sensor has been tripped or
not.\nTypical use case is in Security Systems detecting window or door open.\nThe Property \"value\"
is a boolean.\nA value of 'true' means that contact has been broken (open).\nA value of 'false'
means that contact is in place (closed).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.contact"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Contact" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Contact" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.contact"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The contact indication, true = broken (open), false = in place (closed).",
          "readOnly": true,
          "type": "boolean"
```

```
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.34.5 Property definition

Table 76 defines the Properties that are part of the "oic.r.sensor.contact" Resource Type.

Table 76 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.contact".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The contact indication, true = broken (open), false = in place (closed).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.34.6 CRUDN behaviour

Table 77 defines the CRUDN operations that are supported on the "oic.r.sensor.contact" Resource Type.

Table 77 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.contact".

Create	Read	Update	Delete	Notify
	get			observe

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7.35 Demand Response Load Control (DRLC).

7.35.1 Introduction

This Resource describes any to be applied or currently being applied DRLC signal.
The Property "DRType" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy Profile 2.0.
The Property "start" is a string containing an RFC3339 encoded start time.
The Property "duration" value is in minutes.
The Property "Override" indicates whether the consumer has overridden the request (true) or not (false).
The Resource provides the current DRLC action that is being applied.
A duration of 0 (zero) means that no DRLC is currently active.

7.35.2 Example URI

/DRLCResURI

7.35.3 Resource type

The Resource Type is defined as: "oic.r.energy.drlc".

7.35.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Demand Response Load Control (DRLC).",
    "version": "20190709",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DRLCResURI" : {
      "get": {
        "description": "This Resource describes any to be applied or currently being applied DRLC
signal.\nThe Property \"DRType\" is the ApplianceLoadReductionType defined in Zigbee/HA Smart Energy
Profile 2.0.\nThe Property \"start\" is a string containing an RFC3339 encoded start time.\nThe
Property \"duration\" value is in minutes.\nThe Property \"Override\" indicates whether the consumer
has overridden the request (true) or not (false).\nThe Resource provides the current DRLC action
that is being applied.\nA duration of 0 (zero) means that no DRLC is currently active.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.energy.drlc"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "DRType": 1,
                  "start": "2015-01-09T16:45:00Z",
                  "duration": 10,
                  "override": false,
                  "drlevel": 2,
                  "mandate": true
                },
              "schema": { "$ref": "#/definitions/DRLC" }
            }
```

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```
        }
      },
      "post": {
        "description": "Provides the DRLC action to be applied to the device or updates an existing
action.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {"$ref": "#/definitions/DRLC"},
            "x-example": {
              "DRType": 1,
              "start": "2015-01-09T17:00:00Z",
              "duration": 10
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "Indicates that the target DRLC resource was changed.\nThe new resource
attributes are provided in the response.",
            "x-example": {
              "DRType": 1,
              "start": "2015-01-09T17:00:00Z",
              "duration": 15,
              "override": false
            },
            "schema": {"$ref": "#/definitions/DRLC"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "DRLC" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.drlc"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "start": {
          "description": "The start time for the application of DR.",
          "type": "string",
          "format": "date-time"
        },
        "duration": {
          "description": "The duration of the to be applied DR type in minutes. A value of 0 means
no applied DR.",
          "type": "integer",
          "minimum": 0
        },
        "override": {
          "description": "Whether the consumer has overriden the application of DR.",
          "type": "boolean"
```

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```
        },
        "DRType": {
          "description": "The to be applied demand-response type.",
          "type": "integer"
        },
        "drlevel": {
          "type": "integer",
          "minimum": 0,
          "maximum": 3,
          "description": "Indicator of the strength of the DR response that is requested; 0-0%, 1-
30%, 2-50%, 3-70%"
        },
        "mandate" : {
          "type": "boolean",
          "description": "Whether overriding the DR request by the consumer is allowed"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["DRType"]
    }
  }
}
```

7.35.5 Property definition

Table 78 defines the Properties that are part of the "oic.r.energy.drlc" Resource Type.

Table 78 – The Property definitions of the Resource with type "rt" = "oic.r.energy.drlc".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
start	string	No	Read Write	The start time for the application of DR.
duration	integer	No	Read Write	The duration of the to be applied DR type in minutes. A value of 0 means no applied DR.
override	boolean	No	Read Write	Whether the consumer has overriden the application of DR.

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DRType	integer	Yes	Read Write	The to be applied demand-response type.
drlevel	integer	No	Read Write	Indicator of the strength of the DR response that is requested; 0-0%, 1-30%, 2-50%, 3-70%
mandate	boolean	No	Read Write	Whether overriding the DR request by the consumer is allowed
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.35.6 CRUDN behaviour

Table 79 defines the CRUDN operations that are supported on the "oic.r.energy.drlc" Resource Type.

Table 79 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.drlc".

Create	Read	Update	Delete	Notify
	get	post		observe

7.36 Energy Overload/Circuit Breaker

7.36.1 Introduction

This Resource describes whether an energy overload detector/circuit breaker is currently tripped. The Property "value" is a boolean.
A value of 'true' means that energy overload has been tripped.
A value of 'false' means that energy overload has not been tripped.

7.36.2 Example URI

/EnergyOverloadResURI

7.36.3 Resource type

The Resource Type is defined as: "oic.r.energy.overload".

7.36.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Overload/Circuit Breaker",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
```

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```
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyOverloadResURI" : {
      "get": {
        "description": "This Resource describes whether an energy overload detector/circuit breaker
is currently tripped.\nThe Property \"value\" is a boolean.\nA value of 'true' means that energy
overload has been tripped.\nA value of 'false' means that energy overload has not been tripped.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.energy.overload"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/EnergyOverload" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "EnergyOverload" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.overload"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The energy overload indication,true = tripped, false = not tripped.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
```

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```
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.36.5 Property definition

Table 80 defines the Properties that are part of the "oic.r.energy.overload" Resource Type.

Table 80 – The Property definitions of the Resource with type "rt" = "oic.r.energy.overload".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The energy overload indication,true = tripped, false = not tripped.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.36.6 CRUDN behaviour

Table 81 defines the CRUDN operations that are supported on the "oic.r.energy.overload" Resource Type.

Table 81 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.overload".

Create	Read	Update	Delete	Notify
	get			observe

7.37 Generic Sensor

7.37.1 Introduction

This Resource describes whether some value or property or entity has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that the target has been sensed.
A value of 'false' means that the target has not been sensed.

7.37.2 Example URI

/GenericSensorResURI

7.37.3 Resource type

The Resource Type is defined as: "oic.r.sensor".

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7.37.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Generic Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GenericSensorResURI" : {
      "get": {
        "description": "This Resource describes whether some value or property or entity has been
sensed or not.\nThe Property \"value\" is a boolean.\nA value of 'true' means that the target has
been sensed.\nA value of 'false' means that the target has not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":    ["oic.r.sensor"],
              "id":    "unique_example_id",
              "value": true
            },
            "schema": { "$ref": "#/definitions/Sensor" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Sensor": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":   {
          "description": "true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
```

```
          "type": "number",
          "description": "Measured value for this sensor, units depend on the specific type of
sensor",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

7.37.5 Property definition

Table 82 defines the Properties that are part of the "oic.r.sensor" Resource Type.

Table 82 – The Property definitions of the Resource with type "rt" = "oic.r.sensor".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, units depend on the specific type of sensor

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precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.37.6 CRUDN behaviour

Table 83 defines the CRUDN operations that are supported on the "oic.r.sensor" Resource Type.

Table 83 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor".

Create	Read	Update	Delete	Notify
	get			observe

7.38 Glass Break Sensor

7.38.1 Introduction

This Resource describes a glass break sensor.
The Property "value" is a boolean.
A value of 'true' means that glass break has been sensed.
A value of 'false' means that glass break not been sensed.

7.38.2 Example URI

/GlassBreakResURI

7.38.3 Resource type

The Resource Type is defined as: "oic.r.sensor.glassbreak".

7.38.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Glass Break Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GlassBreakResURI" : {
      "get": {
        "description": "This Resource describes a glass break sensor.\nThe Property \"value\" is a
boolean.\nA value of 'true' means that glass break has been sensed.\nA value of 'false' means that
```

```
glass break not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.glassbreak"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/GlassBreak" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "GlassBreak" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.glassbreak"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The glassbreak indication, true = glass break sensed, false = glass break
not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.38.5 Property definition

Table 84 defines the Properties that are part of the "oic.r.sensor.glassbreak" Resource Type.

Table 84 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.glassbreak".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The glassbreak indication, true = glass break sensed, false = glass break not sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.38.6 CRUDN behaviour

Table 85 defines the CRUDN operations that are supported on the "oic.r.sensor.glassbreak" Resource Type.

Table 85 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.glassbreak".

Create	Read	Update	Delete	Notify
	get			observe

7.39 Heart Rate Zone

7.39.1 Introduction

This Resource describes a measured heart rate by the current Zone using the Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest, Zone 5 is the highest.
The heartRateZone is an enumeration containing one of: "Zone1", "Zone2", "Zone3", "Zone4", and "Zone5".

7.39.2 Example URI

/HeartRateZoneResURI

7.39.3 Resource type

The Resource Type is defined as: "oic.r.sensor.heart.zone".

7.39.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
```

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```
  "info": {
    "title": "Heart Rate Zone",
    "version": "2019-03-28",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeartRateZoneResURI" : {
      "get": {
        "description": "This Resource describes a measured heart rate by the current Zone using the
Zoladz method. The Zoladz method defines Zones based on maximum heart rate; Zone 1 is the lowest,
Zone 5 is the highest.\nThe heartRateZone is an enumeration containing one of: \"Zone1\", \"Zone2\",
\"Zone3\", \"Zone4\", and \"Zone5\".\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":            ["oic.r.sensor.heart.zone"],
                "heartRateZone": "Zone3"
              },
            "schema": { "$ref": "#/definitions/heartRateZone" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "heartRateZone" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.sensor.heart.zone"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
```

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```
        },
        "heartRateZone": {
          "description": "Current heart rate zone based on the Zoladz system.",
          "enum": [
            "Zone1",
            "Zone2",
            "Zone3",
            "Zone4",
            "Zone5"
          ],
          "readOnly": true,
          "type": "string"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["heartRateZone"]
    }
  }
}
```

7.39.5 Property definition

Table 86 defines the Properties that are part of the "oic.r.sensor.heart.zone" Resource Type.

Table 86 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.heart.zone".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
heartRateZone	string	Yes	Read Only	Current heart rate zone based on the Zoladz system.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.39.6 CRUDN behaviour

Table 87 defines the CRUDN operations that are supported on the "oic.r.sensor.heart.zone" Resource Type.

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Table 87 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.heart.zone".

Create	Read	Update	Delete	Notify
	get			observe

7.40 Illuminance Sensor

7.40.1 Introduction

This Resource describes an illuminance sensor.
The Property "illuminance" is a float and represents the sensed luminous flux per unit area in lux.

7.40.2 Example URI

/IlluminanceSensorResURI

7.40.3 Resource type

The Resource Type is defined as: "oic.r.sensor.illuminance".

7.40.4 OpenAPI 2.0 definition

```
{
	"swagger": "2.0",
	"info": {
		"title": "Illuminance Sensor",
		"version": "20190808",
		"license": {
			"name": "OCF Data Model License",
			"url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
			"x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc.
All rights reserved."
		},
		"termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
	},
	"schemes": ["http"],
	"consumes": ["application/json"],
	"produces": ["application/json"],
	"paths": {
		"/IlluminanceSensorResURI": {
			"get": {
				"description": "This Resource describes an illuminance sensor.\nThe
Property \"illuminance\" is a float and represents the sensed luminous flux per unit area in lux.",
				"parameters": [
					{"$ref": "#/parameters/interface"}
				],
				"responses": {
					"200": {
						"description": "",
						"x-example": {
							"rt": ["oic.r.sensor.illuminance"],
							"if": ["oic.if.s", "oic.if.baseline"],
							"illuminance": 450.0,
							"range": [100.0, 500.0]
						},
						"schema": {"$ref": "#/definitions/Illuminance"}
					}
				}
			}
		}
	},
	"parameters": {
		"interface": {
			"in": "query",
			"name": "if",
			"type": "string",
			"enum": ["oic.if.s", "oic.if.baseline"]
```

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```
                }
        },
        "definitions": {
                "Illuminance": {
                        "properties": {
                                "rt": {
                                        "description": "The Resource Type.",
                                        "items": {
                                                "enum": ["oic.r.sensor.illuminance"],
                                                "maxLength": 64,
                                                "type": "string"
                                        },
                                        "minItems": 1,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                },
                                "illuminance": {
                                        "description": "The sensed luminous flux per unit area in
lux.",
                                        "readOnly": true,
                                        "type": "number"
                                },
                                "n": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
                                },
                                "id": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
                                },
                                "range": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
                                },
                                "if": {
                                        "description": "The OCF Interface set supported by this
Resource.",
                                        "items": {
                                                "enum": [
                                                        "oic.if.s",
                                                        "oic.if.baseline"
                                                ],
                                                "type": "string"
                                        },
                                        "minItems": 2,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                }
                        },
                        "type": "object",
                        "required": ["illuminance"]
                }
        }
}
```

7.40.5 Property definition

Table 88 defines the Properties that are part of the "oic.r.sensor.illuminance" Resource Type.

Table 88 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.illuminance".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.

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illuminance	number	Yes	Read Only	The sensed luminous flux per unit area in lux.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.40.6 CRUDN behaviour

Table 89 defines the CRUDN operations that are supported on the "oic.r.sensor.illuminance" Resource Type.

Table 89 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.illuminance".

Create	Read	Update	Delete	Notify
	get			observe

7.41 Magnetic Field Direction Sensor

7.41.1 Introduction

This Resource describes the direction of the Earth's magnetic field at the observer's current point in space.
Typical use case includes measurement of compass readings on a personal device.
The Property "value" is an array containing Hx, Hy, Hz (in that order) each of which are floats.
Each of Hx, Hy and Hz are expressed in A/m (Amperes per metre).

7.41.2 Example URI

/MagneticFieldDirectionResURI

7.41.3 Resource type

The Resource Type is defined as: "oic.r.sensor.magneticfielddirection".

7.41.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Magnetic Field Direction Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MagneticFieldDirectionResURI" : {
      "get": {
```

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```
        "description": "This Resource describes the direction of the Earth's magnetic field at the
observer's current point in space.\nTypical use case includes measurement of compass readings on a
personal device.\nThe Property \"value\" is an array containing Hx, Hy, Hz (in that order) each of
which are floats.\nEach of Hx, Hy and Hz are expressed in A/m (Amperes per metre).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.magneticfielddirection"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": [100.0, 15.0, 90.0]
                },
              "schema": { "$ref": "#/definitions/magneticFieldDirection" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "magneticFieldDirection" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.magneticfielddirection"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The array containing Hx, Hy, Hz.",
          "items": {
            "type": "number"
          },
          "maxItems": 3,
          "minItems": 3,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
```

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```
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.41.5 Property definition

Table 90 defines the Properties that are part of the "oic.r.sensor.magneticfielddirection" Resource Type.

Table 90 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.magneticfielddirection".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	array: see schema	Yes	Read Only	The array containing Hx, Hy, Hz.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.41.6 CRUDN behaviour

Table 91 defines the CRUDN operations that are supported on the "oic.r.sensor.magneticfielddirection" Resource Type.

Table 91 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.magneticfielddirection".

Create	Read	Update	Delete	Notify
	get			observe

7.42 Media

7.42.1 Introduction

This Resource specifies the media types that an OCF Server supports.
The resource is an array of media elements. Each element contains:
A URL at which the specified media type can be accessed.
A string array containing the definition of the media using SDP.
Each entry in the sdp array is an SDP line.
Each line shall follow the SDP description syntax as defined in the SDP specification.
The SDP specification can be found at http://tools.ietf.org/html/rfc4566.

7.42.2 Example URI

/MediaResURI

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7.42.3 Resource type

The Resource Type is defined as: "oic.r.media".

7.42.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media",
    "version": "20190508",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaResURI" : {
      "get": {
        "description": "This Resource specifies the media types that an OCF Server supports.\nThe
resource is an array of media elements.  Each element contains:\n    A URL at which the specified
media type can be accessed.\n    A string array containing the definition of the media using SDP.\n
Each entry in the sdp array is an SDP line.\n    Each line shall follow the SDP description syntax
as defined in the SDP specification.\nThe SDP specification can be found at
http://tools.ietf.org/html/rfc4566.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current media resource.",
              "x-example":
                {
                  "rt": ["oic.r.media"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "media": [
                    {
                      "url": "some example url",
                      "sdp": [
                        "m=video 1 RTP/AVP 96",
                        "a=rtpmap:96 H264/9000",
                        "a=fmtp:96 profile-level-id=42A028;packetization-mode=1"
                      ]
                    },
                    {
                      "url": "some other example1 url",
                      "sdp": [
                        "m=audio 2 RTP/AVP 97",
                        "a=rtpmap:97 MP4A-LATM/90000"
                      ]
                    },
                    {
                      "url": "some other example2 url",
                      "sdp": [
                        "m=video 3 RTP/AVP 98",
                        "a=rtpmap:98 jpeg/90000",
                        "a=fmtp:98 sampling=YCbCr-4:2:0;width=256;height=256"
                      ]
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/Media" }
            }
        }
```

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```
      },
      "post": {
        "description": "This is to change the URL that can be played back by the device. Note that
some devices do not have the capability to set the URL to be played back",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Media" },
            "x-example":
              {
                "media": [
                    {
                      "url": "new example url for playback",
                      "sdp": [
                        "m=video 1 RTP/AVP 100",
                        "a=rtpmap:100 H264/9000",
                        "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                      ]
                    }
                ]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "The current media resource.",
              "x-example":
                {
                  "rt": ["oic.r.media"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "media": [
                    {
                      "url": "new example url for playback",
                      "sdp": [
                        "m=video 1 RTP/AVP 100",
                        "a=rtpmap:100 H264/9000",
                        "a=fmtp:100 profile-level-id=42A028;packetization-mode=1"
                      ]
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/Media" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Media" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.media"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "media": {
          "items": {
            "properties": {
              "sdp": {
                "description": "The array of strings, one per SDP line.",
                "items": {
                  "description": "SDP media or attribute line",
                  "type": "string"
                },
                "type": "array"
              },
              "url": {
                "description": "The url for the media instance.",
                "type": "string"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["media"]
    }
  }
}
```

7.42.5 Property definition

Table 92 defines the Properties that are part of the "oic.r.media" Resource Type.

Table 92 – The Property definitions of the Resource with type "rt" = "oic.r.media".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
media	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.42.6 CRUDN behaviour

Table 93 defines the CRUDN operations that are supported on the "oic.r.media" Resource Type.

Table 93 – The CRUDN operations of the Resource with type "rt" = "oic.r.media".

Create	Read	Update	Delete	Notify
	get	post		observe

7.43 Media Source

7.43.1 Introduction

This Resource defines a single media source that exists on a device.
The source can be an input source or output source, this resource is agnostic of that.
The Property "sourceName" specifies a pre-defined media input or output (e.g."HDMI", "DVI").
The Property "sourceNumber" is a label to specify the instance (e.g. "PC", "1").
The Property "sourceType" is an enumeration defining whether the source is audio, video or both.
The Property "status" is a boolean that determines if the specific source instance is selected or not.
A status of true means that the source instance is selected.
A status of false means that the source instance is not selected.

7.43.2 Example URI

/mediaSourceResURI

7.43.3 Resource type

The Resource Type is defined as: "oic.r.mediasource".

7.43.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceResURI" : {
      "get": {
        "description": "This Resource defines a single media source that exists on a device.\nThe
source can be an input source or output source, this resource is agnostic of that.\nThe Property
\"sourceName\" specifies a pre-defined media input or output (e.g.\"HDMI\", \"DVI\").\nThe Property
\"sourceNumber\" is a label to specify the instance (e.g. \"PC\", \"1\").\nThe Property
\"sourceType\" is an enumeration defining whether the source is audio, video or both.\nThe Property
\"status\" is a boolean that determines if the specific source instance is selected or not.\n A
status of true means that the source instance is selected.\n A status of false means that the source
instance is not selected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
```

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```
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.mediasource"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "sourceName": "HDMI-CEC",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
              "schema": { "$ref": "#/definitions/mediaSource" }
            }
        }
      },
      "post": {
        "description": "Changes the status of the source.\nAllows changes of the \"sourceName\" and
the \"status\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSource" },
            "x-example":
              {
                "sourceName": "my new name",
                "status": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "sourceName": "my new name",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
              "schema": { "$ref": "#/definitions/mediaSource" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "mediaSource" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.mediasource"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "status": {
          "description": "Specifies if the specific source instance is selected or not.",
          "type": "boolean"
        },
        "sourceType": {
          "description": "Specifies the type of the source.",
          "enum": [
            "audioOnly",
            "videoOnly",
            "audioPlusVideo"
          ],
          "readOnly": true,
          "type": "string"
        },
        "sourceName": {
          "description": "Specifies a pre-defined media input or output.",
          "type": "string"
        },
        "sourceNumber": {
          "description": "Label to specify the instance.",
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sourceName", "status"]
    }
  }
}
```

7.43.5 Property definition

Table 94 defines the Properties that are part of the "oic.r.mediasource" Resource Type.

Table 94 – The Property definitions of the Resource with type "rt" = "oic.r.mediasource".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	boolean	Yes	Read Write	Specifies if the specific source instance is selected or not.
sourceType	string	No	Read Only	Specifies the type of the source.

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sourceName	string	Yes	Read Write	Specifies a pre-defined media input or output.
sourceNumber	string	No	Read Write	Label to specify the instance.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.43.6 CRUDN behaviour

Table 95 defines the CRUDN operations that are supported on the "oic.r.mediasource" Resource Type.

Table 95 – The CRUDN operations of the Resource with type "rt" = "oic.r.mediasource".

Create	Read	Update	Delete	Notify
	get	post		observe

7.44 Media Source List

7.44.1 Introduction

This Resource provides the list of all media sources available on the Device (input and/or output). The sources are an array of mediaSource(s) as separately defined see Resource Type "oic.r.mediasource"

7.44.2 Example URI

/mediaSourceListResURI

7.44.3 Resource type

The Resource Type is defined as: "oic.r.mediasourcelist".

7.44.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source List",
    "version": "20190729",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceListResURI" : {
      "get": {
        "description": "This Resource provides the list of all media sources available on the Device
(input and/or output).\nThe sources are an array of mediaSource(s) as separately defined see
Resource Type \"oic.r.mediasource\"",
        "parameters": [
```

```
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.mediasourcelist"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "sources": [
                    {
                      "sourceName": "HDMI-CEC",
                      "sourceNumber": "1",
                      "sourceType": "audioPlusVideo",
                      "status": true
                    },
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                },
              "schema": { "$ref": "#/definitions/mediaSourceList" }
            }
        }
      },
      "post": {
        "description": "Changes the status of the source(s).\nAllows changes of the sourceName and
the status.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example":
              {
                "sources": [
                  {
                   "sourceName": "my new name",
                   "status": true
                  },
                  {
                    "sourceName": "dualRCA"
                  }
                ]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "sources": [
                    {
                      "sourceName": "my new name",
                      "sourceNumber": "1",
                      "sourceType": "audioPlusVideo",
                      "status": true
                    },
                    {
                      "sourceName": "dualRCA",
                      "sourceNumber": "1",
                      "sourceType": "audioOnly",
                      "status": false
                    }
                  ]
                },
```

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```
              "schema": { "$ref": "#/definitions/mediaSourceList" }
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "mediaSourceList" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.mediasourcelist"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "sources": {
            "items": {
              "properties": {
                "sourceName": {
                  "description": "Specifies a pre-defined media input or output.",
                  "type": "string"
                },
                "sourceNumber": {
                  "description": "Label to specify the instance.",
                  "readOnly": true,
                  "type": "string"
                },
                "sourceType": {
                  "description": "Specifies the type of the source.",
                  "enum": [
                    "audioOnly",
                    "videoOnly",
                    "audioPlusVideo"
                  ],
                  "readOnly": true,
                  "type": "string"
                },
                "status": {
                  "description": "Specifies if the specific source instance is selected or not.",
                  "type": "boolean"
                }
              },
              "type": "object"
            },
            "type": "array"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
```

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```
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sources"]
    }
  }
}
```

7.44.5 Property definition

Table 96 defines the Properties that are part of the "oic.r.mediasourcelist" Resource Type.

Table 96 – The Property definitions of the Resource with type "rt" = "oic.r.mediasourcelist".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.44.6 CRUDN behaviour

Table 97 defines the CRUDN operations that are supported on the "oic.r.mediasourcelist" Resource Type.

Table 97 – The CRUDN operations of the Resource with type "rt" = "oic.r.mediasourcelist".

Create	Read	Update	Delete	Notify
	get	post		observe

7.45 Media Source Input

7.45.1 Introduction

This Resource provides the list of input media sources available on the device.
The sources are an array of Media Source(s) see Resource Type "oic.r.mediasource"

7.45.2 Example URI

/mediaSourceInputResURI

7.45.3 Resource type

The Resource Type is defined as: "oic.r.media.input".

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7.45.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source Input",
    "version": "20190729",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceInputResURI" : {
      "get": {
        "description": "This Resource provides the list of input media sources available on the
device.\nThe sources are an array of Media Source(s) see Resource Type \"oic.r.mediasource\"\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt": ["oic.r.media.input"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "sources": [
                {
                  "sourceName": "HDMI-CEC",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
                {
                  "sourceName": "dualRCA",
                  "sourceNumber": "1",
                  "sourceType": "audioOnly",
                  "status": false
                }
              ]
            },
            "schema": { "$ref": "#/definitions/mediaSourceList" }
          }
        }
      },
      "post": {
        "description": "Changes the status of the source(s).\nAllows changes of the sourceName and
the status.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example": {
              "sources": [
                {
                  "sourceName": "my new name",
                  "status": true
                },
                {
                 "sourceName": "dualRCA"
                }
```

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```
            ]
          }
        }
      ],
      "responses": {
        "200": {
          "description" : "",
          "x-example": {
            "sources": [
              {
                "sourceName": "my new name",
                "sourceNumber": "1",
                "sourceType": "audioPlusVideo",
                "status": true
              },
              {
                "sourceName": "dualRCA",
                "sourceNumber": "1",
                "sourceType": "audioOnly",
                "status": false
              }
            ]
          },
          "schema": { "$ref": "#/definitions/mediaSourceList" }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.a", "oic.if.baseline"]
  }
},
"definitions": {
  "mediaSourceList" : {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.media.input"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "sources": {
        "items": {
          "properties": {
            "sourceName": {
              "description": "Specifies a pre-defined media input or output",
              "type": "string"
            },
            "sourceNumber": {
              "description": "Label to specify the instance",
              "readOnly": true,
              "type": "string"
            },
            "sourceType": {
              "description": "Specifies the type of the source",
              "enum": [
                "audioOnly",
                "videoOnly",
                "audioPlusVideo"
              ],
              "readOnly": true,
```

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```
                "type": "string"
              },
              "status": {
                "description": "Specifies if the specific source instance is selected or not",
                "type": "boolean"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sources"]
    }
  }
}
```

7.45.5 Property definition

Table 98 defines the Properties that are part of the "oic.r.media.input" Resource Type.

Table 98 – The Property definitions of the Resource with type "rt" = "oic.r.media.input".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.45.6 CRUDN behaviour

Table 99 defines the CRUDN operations that are supported on the "oic.r.media.input" Resource Type.

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Table 99 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.input".

Create	Read	Update	Delete	Notify
	get	post		observe

7.46 Media Source Output

7.46.1 Introduction

This Resource provides the list of output media sources available on the device.
The sources are an array of Media Source(s) see Resource Type "oic.r.mediasource"

7.46.2 Example URI

/mediaSourceOutputResURI

7.46.3 Resource type

The Resource Type is defined as: "oic.r.media.output".

7.46.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Source Output",
    "version": "20190729",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/mediaSourceOutputResURI" : {
      "get": {
        "description": "This Resource provides the list of output media sources available on the
device.\nThe sources are an array of Media Source(s) see Resource Type \"oic.r.mediasource\"\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt": ["oic.r.media.output"],
              "if": ["oic.if.a", "oic.if.baseline"],
              "sources": [
                {
                  "sourceName": "HDMI-CEC",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
                {
                  "sourceName": "dualRCA",
                  "sourceNumber": "1",
                  "sourceType": "audioOnly",
                  "status": false
                }
              ]
            },
```

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```
            "schema": { "$ref": "#/definitions/mediaSourceList" }
          }
        }
      },
      "post": {
        "description": "Changes the status of the source(s).\nAllows changes of the sourceName and
the status.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/mediaSourceList" },
            "x-example": {
              "sources": [
                {
                  "sourceName": "my new name",
                  "status": true
                },
                {
                 "sourceName": "dualRCA"
                }
              ]
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "sources": [
                {
                  "sourceName": "my new name",
                  "sourceNumber": "1",
                  "sourceType": "audioPlusVideo",
                  "status": true
                },
                {
                  "sourceName": "dualRCA",
                  "sourceNumber": "1",
                  "sourceType": "audioOnly",
                  "status": false
                }
              ]
            },
            "schema": { "$ref": "#/definitions/mediaSourceList" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "mediaSourceList" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.media.output"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
```

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```
          "readOnly": true,
          "type": "array"
        },
        "sources": {
          "items": {
            "properties": {
              "sourceName": {
                "description": "Specifies a pre-defined media input or output",
                "type": "string"
              },
              "sourceNumber": {
                "description": "Label to specify the instance",
                "readOnly": true,
                "type": "string"
              },
              "sourceType": {
                "description": "Specifies the type of the source",
                "enum": [
                  "audioOnly",
                  "videoOnly",
                  "audioPlusVideo"
                ],
                "readOnly": true,
                "type": "string"
              },
              "status": {
                "description": "Specifies if the specific source instance is selected or not",
                "type": "boolean"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["sources"]
    }
  }
}
```

7.46.5 Property definition

Table 100 defines the Properties that are part of the "oic.r.media.output" Resource Type.

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Table 100 – The Property definitions of the Resource with type "rt" = "oic.r.media.output".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
sources	array: see schema	Yes	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.46.6 CRUDN behaviour

Table 101 defines the CRUDN operations that are supported on the "oic.r.media.output" Resource Type.

Table 101 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.output".

Create	Read	Update	Delete	Notify
	get	post		observe

7.47 Motion Sensor

7.47.1 Introduction

This Resource describes whether motion has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that motion has been sensed.
A value of 'false' means that motion not been sensed.

7.47.2 Example URI

/MotionResURI

7.47.3 Resource type

The Resource Type is defined as: "oic.r.sensor.motion".

7.47.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Motion Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MotionResURI" : {
      "get": {
        "description": "This Resource describes whether motion has been sensed or not.\nThe Property
```

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```
\"value\" is a boolean.\nA value of 'true' means that motion has been sensed.\nA value of 'false'
means that motion not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.motion"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Motion" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Motion" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.motion"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The motion sensor, true = motion sensed, false = motion not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.47.5 Property definition

Table 102 defines the Properties that are part of the "oic.r.sensor.motion" Resource Type.

Table 102 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.motion".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The motion sensor, true = motion sensed, false = motion not sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.47.6 CRUDN behaviour

Table 103 defines the CRUDN operations that are supported on the "oic.r.sensor.motion" Resource Type.

Table 103 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.motion".

Create	Read	Update	Delete	Notify
	get			observe

7.48 Night Mode

7.48.1 Introduction

This Resource describes a night mode on/off feature.
A nightMode value of 'true' means that the feature is on.
A nightMode value of 'false' means that the feature is off.

7.48.2 Example URI

/NightModeResURI

7.48.3 Resource type

The Resource Type is defined as: "oic.r.nightmode".

7.48.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Night Mode",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
```

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```
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/NightModeResURI" : {
      "get": {
        "description": "This Resource describes a night mode on/off feature.\nA nightMode value of
'true' means that the feature is on.\nA nightMode value of 'false' means that the feature is off.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.nightmode"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "nightMode": false
                },
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/NightMode" },
            "x-example":
              {
                "nightMode": true
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "nightMode": true
                },
              "schema": { "$ref": "#/definitions/NightMode" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "NightMode" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
```

```
            "enum": ["oic.r.nightmode"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "nightMode": {
          "description": "The status of the Night Mode.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["nightMode"]
    }
  }
}
```

7.48.5 Property definition

Table 104 defines the Properties that are part of the "oic.r.nightmode" Resource Type.

Table 104 – The Property definitions of the Resource with type "rt" = "oic.r.nightmode".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
nightMode	boolean	Yes	Read Write	The status of the Night Mode.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.48.6 CRUDN behaviour

Table 105 defines the CRUDN operations that are supported on the "oic.r.nightmode" Resource Type.

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Table 105 – The CRUDN operations of the Resource with type "rt" = "oic.r.nightmode".

Create	Read	Update	Delete	Notify
	get	post		observe

7.49 Presence Sensor

7.49.1 Introduction

This Resource describes whether presence has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that presence has been sensed.
A value of 'false' means that presence not been sensed.

7.49.2 Example URI

/PresenceResURI

7.49.3 Resource type

The Resource Type is defined as: "oic.r.sensor.presence".

7.49.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Presence Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PresenceResURI" : {
      "get": {
        "description": "This Resource describes whether presence has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that presence has been sensed.\nA value of
'false' means that presence not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.presence"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Presence" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
```

```
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Presence" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.presence"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The presences sensor, true = precense sensed, false = precensenot
sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.49.5 Property definition

Table 106 defines the Properties that are part of the "oic.r.sensor.presence" Resource Type.

Table 106 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.presence".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The presences sensor, true = precense sensed,

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				false = precensenot sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.49.6 CRUDN behaviour

Table 107 defines the CRUDN operations that are supported on the "oic.r.sensor.presence" Resource Type.

Table 107 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.presence".

Create	Read	Update	Delete	Notify
	get			observe

7.50 Pan Tilt Zoom Movement

7.50.1 Introduction

This Resource specifies the pan tilt and zoom capabilities of a device.
The Resource Type is dynamic and reflects whether the values apply to physical movement of the device or digital/virtual enhancements to the image.
For physical movement the Resource Type is "oic.r.movement.ptz".
For digital/virtual image enhancements the Resource Type is "oic.r.image.ptz".
The Properties "pan" and "tilt" are specified in degrees.
The Property "zoomFactor" is a value in the range 1-100 for linear (optical) zoom.
The zoom factor is a value in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom.
If there is no zoom value to set the zoom factor shall be '1x'.
The value 0 degrees means neutral, this is a vendor defined setting.
Note that this resource also can be used to create an offset for physical movement.
When that is the case, the Resource Type value is: "oic.r.movement.offset.ptz"
Note that this resource also can be used to create an offset for image movement.
When that is the case, the Resource Type value is: "oic.r.image.offset.ptz".
When the Property "pan_range" value is omitted, then the range is [-180.0,180.0].
If "pan" is not supported then the range shall be [0.0,0.0]
When the Property "tilt_range" value is omitted, then the range is [-180.0,180.0].
If "tilt" is not supported then the range shall be [0.0,0.0].

7.50.2 Example URI

/PanTiltZoomResURI

7.50.3 Resource type

The Resource Type is defined as: "oic.r.ptz".

7.50.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pan Tilt Zoom Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
```

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```
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PanTiltZoomResURI" : {
      "get": {
        "description": "This Resource specifies the pan tilt and zoom capabilities of a device.\nThe
Resource Type is dynamic and reflects whether the values apply to\n  physical movement of the device
or digital/virtual enhancements to the image.\nFor physical movement the Resource Type is
\"oic.r.movement.ptz\".\nFor digital/virtual image enhancements the Resource Type is
\"oic.r.image.ptz\".\nThe Properties \"pan\" and \"tilt\" are specified in degrees.\nThe Property
\"zoomFactor\" is a value in the range 1-100 for linear (optical) zoom.\nThe zoom factor is a value
in the range [1x, 2x, 4x, 8x, 16x, 32x] for digital zoom.\nIf there is no zoom value to set the zoom
factor shall be '1x'.\nThe value 0 degrees means neutral, this is a vendor defined setting.\nNote
that this resource also can be used to create an offset for physical movement.\nWhen that is the
case, the Resource Type value is: \"oic.r.movement.offset.ptz\"\nNote that this resource also can be
used to create an offset for image movement.\nWhen that is the case, the Resource Type value is:
\"oic.r.image.offset.ptz\".\nWhen the Property \"pan_range\" value is omitted, then the range is [-
180.0,180.0].\nIf \"pan\" is not supported then the range shall be [0.0,0.0]\nWhen the Property
\"tilt_range\" value is omitted, then the range is [-180.0,180.0].\nIf \"tilt\" is not supported
then the range shall be [0.0,0.0].",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current pan, tilt and zoom setting.",
              "x-example":
                {
                  "rt": ["oic.r.ptz"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "pan": 0.0,
                  "tilt": 0.0,
                  "zoomFactor": "2x"
                },
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
            }
        }
      },
      "post": {
        "description": "Sets the current pan, tilt and zoom value.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/PanTiltZoom" },
            "x-example":
              {
                "pan": 10.0,
                "tilt": -10.0,
                "zoomFactor": "4x"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "pan": 10.0,
                  "tilt": -10.0,
                  "zoomFactor": "4x"
                },
              "schema": { "$ref": "#/definitions/PanTiltZoom" }
```


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```
            }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "PanTiltZoom" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.ptz"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "tilt_range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
          },
          "zoomFactor": {
            "description": "The zoom factor value.",
            "type": "string"
          },
          "tilt": {
            "description": "The vertical tilt in degrees.",
            "type": "number"
          },
          "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
          },
          "pan_range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
          },
          "zoomFactorRange": {
            "description": "The allowed Zoom Factor values. Linear equates to a 1-100 min/max.",
            "enum": [
              "linear",
              "1x",
              "2x",
              "4x",
              "8x",
              "16x",
              "32x"
            ],
            "readOnly": true,
            "type": "string"
          },
          "pan": {
            "description": "The horizontal pan in degrees.",
            "type": "number"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```

```
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["pan", "tilt", "zoomFactor"]
    }
  }
}
```

7.50.5 Property definition

Table 108 defines the Properties that are part of the "oic.r.ptz" Resource Type.

Table 108 – The Property definitions of the Resource with type "rt" = "oic.r.ptz".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
tilt_range	multiple types: see schema	No	Read Write	
zoomFactor	string	Yes	Read Write	The zoom factor value.
tilt	number	Yes	Read Write	The vertical tilt in degrees.
precision	multiple types: see schema	No	Read Write	
pan_range	multiple types: see schema	No	Read Write	
zoomFactorRange	string	No	Read Only	The allowed Zoom Factor values. Linear equates to a 1-100 min/max.
pan	number	Yes	Read Write	The horizontal pan in degrees.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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7.50.6 CRUDN behaviour

Table 109 defines the CRUDN operations that are supported on the "oic.r.ptz" Resource Type.

Table 109 – The CRUDN operations of the Resource with type "rt" = "oic.r.ptz".

Create	Read	Update	Delete	Notify
	get	post		observe

7.51 Signal Strength

7.51.1 Introduction

This Resource describes the strength of a signal by means of lqi and rssi.
The Property "lqi" is a floating point number that represents Link Quality Indicator.
The Property "rssi" is a floating point number that represents the received signal strength indicator.

7.51.2 Example URI

/SignalStrengthResURI

7.51.3 Resource type

The Resource Type is defined as: "oic.r.signalstrength".

7.51.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Signal Strength",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SignalStrengthResURI" : {
      "get": {
        "description": "This Resource describes the strength of a signal by means of lqi and
rssi.\nThe Property \"lqi\" is a floating point number that represents Link Quality Indicator.\nThe
Property \"rssi\" is a floating point number that represents the received signal strength
indicator.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.signalstrength"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "lqi": 10.0,
                  "rssi": 55.0
                }
                ,
              "schema": { "$ref": "#/definitions/SignalStrength" }
            }
        }
```

```
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SignalStrength" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.signalstrength"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "lqi": {
          "description": "The current value of Link Quality Indicator.",
          "readOnly": true,
          "type": "number"
        },
        "rssi": {
          "description": "The current value of Received Signal Strength Indicator.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["lqi", "rssi"]
    }
  }
}
```

7.51.5 Property definition

Table 110 defines the Properties that are part of the "oic.r.signalstrength" Resource Type.

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Table 110 – The Property definitions of the Resource with type "rt" = "oic.r.signalstrength".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
lqi	number	Yes	Read Only	The current value of Link Quality Indicator.
rssi	number	Yes	Read Only	The current value of Received Signal Strength Indicator.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.51.6 CRUDN behaviour

Table 111 defines the CRUDN operations that are supported on the "oic.r.signalstrength" Resource Type.

Table 111 – The CRUDN operations of the Resource with type "rt" = "oic.r.signalstrength".

Create	Read	Update	Delete	Notify
	get			observe

7.52 Speech Synthesis-TTS

7.52.1 Introduction

This Resource may be created on the OCF Server that is capable of rendering speech by an OCF Client and allows the client to provide an SSML document with text to render
or may be created on the OIC Server by some resident application.
The audio rendered is at this stage local to the Server (i.e. not streamed).
The utterance is an SSML document.
The supportedLanguages is an array of the RFC5646 defined language tags that are supported.
The supportedVoices is an SSML document fragment indicating the voices that are supported.
Utterance in the example shall be a properly escaped (JSON rules) SSML document. An example:
"<?xml version="1.0" encoding="ISO-8859-1"?>

<speak version="1.1" xmlns="http://www.w3.org/2001/10/synthesis"

xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"

xsi:schemaLocation="http://www.w3.org/2001/10/synthesis

http://www.w3.org/TR/speech-synthesis11/synthesis.xsd"

xml:lang="en-US">

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The title of the movie is:

"Monty Pythons The Meaning of Life"

which is directed by Terry Jones.

</speak"

7.52.2 Example URI

/SpeechTTSResURI

7.52.3 Resource type

The Resource Type is defined as: "oic.r.speech.tts".

7.52.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Speech Synthesis-TTS",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SpeechTTSResURI" : {
      "get": {
        "description": "This Resource may be created on the OCF Server that is capable of rendering
speech by an OCF Client and allows the client to provide an SSML document with text to render\n or
may be created on the OIC Server by some resident application.\nThe audio rendered is at this stage
local to the Server (i.e. not streamed).\nThe utterance is an SSML document.\nThe supportedLanguages
is an array of the RFC5646 defined language tags that are supported.\nThe supportedVoices is an SSML
document fragment indicating the voices that are supported.\nUtterance in the example shall be a
properly escaped (JSON rules) SSML document. An example:\n  \"<?xml version=\"1.0\" encoding=\"ISO-
8859-1\"?>\n\r\n  <speak version=\"1.1\" xmlns=\"http:\/\/www.w3.org\/2001\/10\/synthesis\"\n\r\n
\txmlns:xsi=\"http:\/\/www.w3.org\/2001\/XMLSchema-instance\"\n\r\n
\txsi:schemaLocation=\"http:\/\/www.w3.org\/2001\/10\/synthesis\n\r\n
\thttp:\/\/www.w3.org\/TR\/speech-synthesis11\/synthesis.xsd\"\n\r\n  \txml:lang=\"en-US\">\n\r\n
\n\r\n  \tThe title of the movie is:\n\r\n  \t\"Monty Pythons The Meaning of Life\"\n\r\n  \twhich
is directed by Terry Jones.\n\r\n  <\/speak\"\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
```

```
                  "rt": ["oic.r.speech.tts"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "utterance": "Strange women lying in ponds distributing swords is no basis for a
system of government.",
                  "supportedLanguages": ["en-US", "en-GB", "fr-CA"],
                  "supportedVoices": "<voice gender=\"female\" variant=\"2\"><\/voice>\n\r<voice
name=\"Mike\"><\/voice>"
                },
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      },
      "post": {
        "description": "Changes the utterance being rendered.\nExample shows a change in language
selected.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Speech" },
            "x-example":
              {
                "utterance": "Alright, but apart from the sanitation, the medicine, education, wine,
public order, irrigation, roads, the fresh-water system, and public health, what have the Romans
ever done for us?"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "utterance": "Alright, but apart from the sanitation, the medicine, education,
wine, public order, irrigation, roads, the fresh-water system, and public health, what have the
Romans ever done for us?"
                },
              "schema": { "$ref": "#/definitions/Speech" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Speech" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.speech.tts"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "supportedLanguages": {
          "description": "The array of supported language tags.",
          "items": {
            "type": "string"
```

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```
          },
          "readOnly": true,
          "type": "array"
        },
        "supportedVoices": {
          "description": "The SSML document fragment indicating supported voices.",
          "readOnly": true,
          "maxLength": 1024,
          "type": "string"
        },
        "utterance": {
          "description": "The SSML document including the speech body.",
          "maxLength": 1024,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["utterance"]
    }
  }
}
```

7.52.5 Property definition

Table 112 defines the Properties that are part of the "oic.r.speech.tts" Resource Type.

Table 112 – The Property definitions of the Resource with type "rt" = "oic.r.speech.tts".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
supportedLanguages	array: see schema	No	Read Only	The array of supported language tags.
supportedVoices	string	No	Read Only	The SSML document fragment indicating supported voices.
utterance	string	Yes	Read Write	The SSML document including the speech body.
n	multiple types: see schema	No	Read Write	

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id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.52.6 CRUDN behaviour

Table 113 defines the CRUDN operations that are supported on the "oic.r.speech.tts" Resource Type.

Table 113 – The CRUDN operations of the Resource with type "rt" = "oic.r.speech.tts".

Create	Read	Update	Delete	Notify
	get	post		observe

7.53 Touch Sensor

7.53.1 Introduction

This Resource describes whether a touch has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that touch has been sensed.
A value of 'false' means that touch not been sensed.

7.53.2 Example URI

/TouchResURI

7.53.3 Resource type

The Resource Type is defined as: "oic.r.sensor.touch".

7.53.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Touch Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TouchResURI" : {
      "get": {
        "description": "This Resource describes whether a touch has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that touch has been sensed.\nA value of
'false' means that touch not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
```

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```
                  "rt": ["oic.r.sensor.touch"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/Touch" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Touch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.touch"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The touch sensor, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.53.5 Property definition

Table 114 defines the Properties that are part of the "oic.r.sensor.touch" Resource Type.

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Table 114 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.touch".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The touch sensor, true = sensed, false = not sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.53.6 CRUDN behaviour

Table 115 defines the CRUDN operations that are supported on the "oic.r.sensor.touch" Resource Type.

Table 115 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.touch".

Create	Read	Update	Delete	Notify
	get			observe

7.54 UV Radiation

7.54.1 Introduction

This Resource specifies UV radiation measurement.
The Property "measurement" is the current measured UV Index

7.54.2 Example URI

/UVRadiationResURI

7.54.3 Resource type

The Resource Type is defined as: "oic.r.sensor.radiation.uv".

7.54.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "UV Radiation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This Resource specifies UV radiation measurement.\nThe Property
\"measurement\" is the current measured UV Index",
```

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```
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.radiation.uv"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "measurement": 3.5
                }
                ,
              "schema": { "$ref": "#/definitions/UVRadiation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVRadiation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.radiation.uv"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "measurement": {
          "description": "The measured UV Index.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :
                {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": ["measurement"]
    }
  }
}
```

7.54.5 Property definition

Table 116 defines the Properties that are part of the "oic.r.sensor.radiation.uv" Resource Type.

Table 116 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.radiation.uv".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
measurement	number	Yes	Read Only	The measured UV Index.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.54.6 CRUDN behaviour

Table 117 defines the CRUDN operations that are supported on the "oic.r.sensor.radiation.uv" Resource Type.

Table 117 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.radiation.uv".

Create	Read	Update	Delete	Notify
	get			observe

7.55 Water Sensor

7.55.1 Introduction

This Resource describes whether water has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that water has been sensed.
A value of 'false' means that water not been sensed.

7.55.2 Example URI

/WaterResURI

7.55.3 Resource type

The Resource Type is defined as: "oic.r.sensor.water".

7.55.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Water Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WaterResURI" : {
      "get": {
        "description": "This Resource describes whether water has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that water has been sensed.\nA value of 'false'
means that water not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":    ["oic.r.sensor.water"],
              "id":    "unique_example_id",
              "value": true
            },
            "schema": { "$ref": "#/definitions/Water" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Water": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.water"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":  {
          "description": "true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor in units of litres/hr",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
```

```
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

7.55.5 Property definition

Table 118 defines the Properties that are part of the "oic.r.sensor.water" Resource Type.

Table 118 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.water".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor in units of litres/hr
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.55.6 CRUDN behaviour

Table 119 defines the CRUDN operations that are supported on the "oic.r.sensor.water" Resource Type.

Table 119 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.water".

Create	Read	Update	Delete	Notify
	get			observe

7.56 Acceleration Sensor

7.56.1 Introduction

This Resource provides a measure of proper acceleration (g force) as opposed to co-ordinate acceleration (which is dependent on the co-ordinate system and the observer).
The Property "value" is a float which describes the acceleration experienced by the object in "g".

7.56.2 Example URI

/AccelerationResURI

7.56.3 Resource type

The Resource Type is defined as: "oic.r.sensor.acceleration".

7.56.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Acceleration Sensor",
    "version": "20190215",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AccelerationResURI" : {
      "get": {
        "description": "This Resource provides a measure of proper acceleration (g force) as opposed
to co-ordinate acceleration (which is dependent on the co-ordinate system and the observer).\nThe
Property \"value\" is a float which describes the acceleration experienced by the object in \"g\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.acceleration"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "acceleration": 0.5
                },
              "schema": { "$ref": "#/definitions/acceleration" }
            }
```

```
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "acceleration" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.acceleration"]
          },
          "minItems": 1,
          "uniqueItems" : true,
          "readOnly": true,
          "type": "array"
        },
        "acceleration": {
          "description": "The sensed acceleration experienced in 'g'.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
```

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```
      "type": "object",
      "required": ["acceleration"]
    }
  }
}
```

7.56.5 Property definition

Table 120 defines the Properties that are part of the "oic.r.sensor.acceleration" Resource Type.

Table 120 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.acceleration".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
acceleration	number	Yes	Read Only	The sensed acceleration experienced in 'g'.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.56.6 CRUDN behaviour

Table 121 defines the CRUDN operations that are supported on the "oic.r.sensor.acceleration" Resource Type.

Table 121 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.acceleration".

Create	Read	Update	Delete	Notify
	get			observe

7.57 Movement

7.57.1 Introduction

This Resource specifies linear movement.
The Property "movementSettings" is an array of strings containing possible movement values (e.g. spin, stop, left, right).
The Property "movement" is the currently selected movement value.
The Property "movementModifier" is a modifier to the movement value (e.g. "spin", "90")

7.57.2 Example URI

/MovementResURI

7.57.3 Resource type

The Resource Type is defined as: "oic.r.movement.linear".

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7.57.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Movement",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MovementResURI" : {
      "get": {
        "description": "This Resource specifies linear movement.\nThe Property \"movementSettings\"
is an array of strings containing possible movement values (e.g. spin, stop, left, right).\nThe
Property \"movement\" is the currently selected movement value.\nThe Property \"movementModifier\"
is a modifier to the movement value (e.g. \"spin\", \"90\")\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.movement.linear"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement": "rotate",
                  "movementModifier": "90"
                },
              "schema": { "$ref": "#/definitions/movement" }
            }
        }
      },
      "post": {
        "description": "Sets the current device movement.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/movement" },
            "x-example":
              {
                "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                "movement": "stop"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "movementSettings": ["stop", "left", "right", "rotate", "forward", "backward"],
                  "movement": "stop"
                },
              "schema": { "$ref": "#/definitions/movement" }
            }
        }
```

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```
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "movement" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.movement.linear"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "movementSettings": {
          "description": "The array of possible movement values.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "movementModifier": {
          "description": "The modifier to the movement value (e.g. spin-90, left-20), units are
device dependent.",
          "type": "string"
        },
        "movement": {
          "description": "The current movement value.",
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["movementSettings", "movement"]
    }
  }
```

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```
}
```

7.57.5 Property definition

Table 122 defines the Properties that are part of the "oic.r.movement.linear" Resource Type.

Table 122 – The Property definitions of the Resource with type "rt" = "oic.r.movement.linear".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
movementSettings	array: see schema	Yes	Read Only	The array of possible movement values.
movementModifier	string	No	Read Write	The modifier to the movement value (e.g. spin-90, left-20), units are device dependent.
movement	string	Yes	Read Write	The current movement value.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.57.6 CRUDN behaviour

Table 123 defines the CRUDN operations that are supported on the "oic.r.movement.linear" Resource Type.

Table 123 – The CRUDN operations of the Resource with type "rt" = "oic.r.movement.linear".

Create	Read	Update	Delete	Notify
	get	post		observe

7.58 Sleep Sensor

7.58.1 Introduction

This Resource describes whether human sleep has been sensed or not.
The Property "value" is a boolean.
A value of 'true' means that sleep has been sensed.
A value of 'false' means that sleep not been sensed.

7.58.2 Example URI

/SleepSensorResURI

7.58.3 Resource type

The Resource Type is defined as: "oic.r.sensor.sleep".

7.58.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
```

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```
  "info": {
    "title": "Sleep Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SleepSensorResURI" : {
      "get": {
        "description": "This Resource describes whether human sleep has been sensed or not.\nThe
Property \"value\" is a boolean.\nA value of 'true' means that sleep has been sensed.\nA value of
'false' means that sleep not been sensed.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.sleep"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "value": true
                },
              "schema": { "$ref": "#/definitions/sleep" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "sleep" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.sleep"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value": {
          "description": "The sleep sensor, true = sleep sensed, false = sleep not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
```

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```
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["value"]
    }
  }
}
```

7.58.5 Property definition

Table 124 defines the Properties that are part of the "oic.r.sensor.sleep" Resource Type.

Table 124 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.sleep".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
value	boolean	Yes	Read Only	The sleep sensor, true = sleep sensed, false = sleep not sensed.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.58.6 CRUDN behaviour

Table 125 defines the CRUDN operations that are supported on the "oic.r.sensor.sleep" Resource Type.

Table 125 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.sleep".

Create	Read	Update	Delete	Notify
	get			observe

7.59 Smoke Sensor

7.59.1 Introduction

This Resource describes whether smoke has been sensed or not.
The Property "value" is a boolean.

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A value of 'true' means that smoke has been sensed.
A value of 'false' means that smoke not been sensed.

7.59.2 Example URI

/SmokeSensorResURI

7.59.3 Resource type

The Resource Type is defined as: "oic.r.sensor.smoke".

7.59.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Smoke Sensor",
    "version": "20191118",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SmokeSensorResURI" : {
      "get": {
        "description": "This Resource describes whether smoke has been sensed or not.\nThe Property
\"value\" is a boolean.\nA value of 'true' means that smoke has been sensed.\nA value of 'false'
means that smoke not been sensed.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":     ["oic.r.sensor.smoke"],
              "id":     "unique_example_id",
              "value":  true
            },
            "schema": { "$ref": "#/definitions/smoke" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "smoke": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.sensor.smoke"]
```

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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "value":  {
          "description": "The smoke indicator, true = sensed, false = not sensed.",
          "readOnly": true,
          "type": "boolean"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, this is a percentage",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["value"]
    }
  }
}
```

7.59.5 Property definition

Table 126 defines the Properties that are part of the "oic.r.sensor.smoke" Resource Type.

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Table 126 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.smoke".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
value	boolean	Yes	Read Only	The smoke indicator, true = sensed, false = not sensed.
measurement	number	No	Read Only	Measured value for this sensor, this is a percentage
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.59.6 CRUDN behaviour

Table 127 defines the CRUDN operations that are supported on the "oic.r.sensor.smoke" Resource Type.

Table 127 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.smoke".

Create	Read	Update	Delete	Notify
	get			observe

7.60 Three Axis Sensor

7.60.1 Introduction

This Resource provides a representation of the measurement from a three-axis sensor.
The Property "orientation" is an array of numbers representing x-plane, y-plane and z-plane values.
The unit of measurement for each pane is 'g'.

7.60.2 Example URI

/ThreeAxisResURI

7.60.3 Resource type

The Resource Type is defined as: "oic.r.sensor.threeaxis".

7.60.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Three Axis Sensor",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
```

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```
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ThreeAxisResURI" : {
      "get": {
        "description": "This Resource provides a representation of the measurement from a three-axis
sensor.\nThe Property \"orientation\" is an array of numbers representing x-plane, y-plane and z-
plane values.\nThe unit of measurement for each pane is 'g'.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.threeaxis"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "orientation": [0.7, 1.1, -0.2]
                },
              "schema": { "$ref": "#/definitions/threeAxis" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "threeAxis" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.threeaxis"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "orientation": {
          "description": "The array containing x-plane, y-plane and z-plane orientation in 'g'.",
          "items": {
            "type": "number"
          },
          "maxItems": 3,
          "minItems": 3,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
```

```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["orientation"]
      }
    }
}
```

7.60.5 Property definition

Table 128 defines the Properties that are part of the "oic.r.sensor.threeaxis" Resource Type.

Table 128 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.threeaxis".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
orientation	array: see schema	Yes	Read Only	The array containing x-plane, y-plane and z-plane orientation in 'g'.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.60.6 CRUDN behaviour

Table 129 defines the CRUDN operations that are supported on the "oic.r.sensor.threeaxis" Resource Type.

Table 129 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.threeaxis".

Create	Read	Update	Delete	Notify
	get			observe

7.61 Altimeter

7.61.1 Introduction

This Resource describes the properties associated with altimeter.
The Property "alt" is the distance (metres) above or below 'local' sea-level.

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7.61.2 Example URI

/AltimeterResURI

7.61.3 Resource type

The Resource Type is defined as: "oic.r.altimeter".

7.61.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Altimeter",
    "version": "20190225",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AltimeterResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with altimeter.\nThe
Property \"alt\" is the distance (metres) above or below 'local' sea-level.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current the distance (metres) above or below 'local'
sea-level.",
              "x-example":
                {
                  "rt":  ["oic.r.altimeter"],
                  "if":  ["oic.if.s", "oic.if.baseline"],
                  "alt": 1500.0
                },
              "schema": { "$ref": "#/definitions/Altimeter" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Altimeter" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.altimeter"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
```

```
          "readOnly": true,
          "type": "array"
        },
        "alt" :
                {
          "description": "The current distance (metres) above or below 'local' sea-level.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
            "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["alt"]
    }
  }
}
```

7.61.5 Property definition

Table 130 defines the Properties that are part of the "oic.r.altimeter" Resource Type.

Table 130 – The Property definitions of the Resource with type "rt" = "oic.r.altimeter".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
alt	number	Yes	Read Only	The current distance (metres) above or below 'local' sea-level.

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n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.61.6 CRUDN behaviour

Table 131 defines the CRUDN operations that are supported on the "oic.r.altimeter" Resource Type.

Table 131 – The CRUDN operations of the Resource with type "rt" = "oic.r.altimeter".

Create	Read	Update	Delete	Notify
	get			observe

7.62 Clock

7.62.1 Introduction

This Resource describes the properties associated with clock and time.
Clock is a time information.
The Property "datetime" is using RFC3339 datetime format (e.g: "2007-04-05T14:30Z") (Time+Date+Timezone)
The Property "countdown" is the desired total seconds for countdown.

7.62.2 Example URI

/ClockResURI

7.62.3 Resource type

The Resource Type is defined as: "oic.r.clock".

7.62.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Clock",
    "version": "20190327",
     "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ClockResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with clock and
```

```
time.\nClock is a time information.\nThe Property \"datetime\" is using RFC3339 datetime format
(e.g: \"2007-04-05T14:30Z\") (Time+Date+Timezone)\nThe Property \"countdown\" is the desired total
seconds for countdown.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.clock"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "datetime": "2015-11-05T14:30:00Z",
                  "countdown": 0.0
                },
              "schema": { "$ref": "#/definitions/Clock" }
            }
        }
      },
      "post": {
        "description": "Sets the desired datetime.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Clock" },
            "x-example":
              {
                "datetime": "2015-11-05T14:30:00Z",
                "countdown": 0.0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the datetime value was successfully changed.\nThe new
datetime value is provided in the response.\n",
              "x-example":
                {
                  "datetime": "2015-11-05T14:30:00Z",
                  "countdown": 0.0
                }
                ,
              "schema": { "$ref": "#/definitions/Clock" }
            },
            "403": {
              "description" : "Indicates that OIC client sent an invalid property value to the
server.\nThe server responds with the required input representation.\n",
              "x-example":
                {
                  "datetime": "2015-11-05T14:30:00Z",
                  "countdown": 0.0
                }
                ,
              "schema": { "$ref": "#/definitions/Clock" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
```

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```
    "Clock": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.clock"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "countdown": {
          "description": "The desired total seconds for countdown.",
          "minimum": 0,
          "type": "number"
        },
        "datetime": {
          "description": "Rhe date time using RFC3339 datetime format (e.g: 2007-04-05T14:30:00Z,
2007-04-05T14:30:00+09:00).",
          "type": "string",
          "format" : "date-time"
        },
         "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["datetime"]
    }
  }
}
```

7.62.5 Property definition

Table 132 defines the Properties that are part of the "oic.r.clock" Resource Type.

Table 132 – The Property definitions of the Resource with type "rt" = "oic.r.clock".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
countdown	number	No	Read Write	The desired total seconds for countdown.
datetime	string	Yes	Read Write	Rhe date time using RFC3339 datetime

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				format (e.g: 2007-04-05T14:30:00Z, 2007-04-05T14:30:00+09:00).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.62.6 CRUDN behaviour

Table 133 defines the CRUDN operations that are supported on the "oic.r.clock" Resource Type.

Table 133 – The CRUDN operations of the Resource with type "rt" = "oic.r.clock".

Create	Read	Update	Delete	Notify
	get	post		observe

7.63 Geolocation

7.63.1 Introduction

This Resource describes the properties associated with the current geolocation coordinate.
Geolocation is a geolocation coordinate data.
The Property "latitude" is a device's current Latitude coordinate (degrees).
The Property "longitude" is a device's current Longitude coordinate (degrees).
The Property "alt" is a device's current distance (metres) above or below 'local' sea-level.
The Property "accuracy" is the accuracy level of the latitude and longitude coordinates (metres).
The Property "altitudeAccuracy" is the accuracy level of the altitude coordinates (metres).
The Property "heading" is a direction of travel of device (degree).
The Property "speed" is a device's current velocity (metres per second).

7.63.2 Example URI

/GeolocationResURI

7.63.3 Resource type

The Resource Type is defined as: "oic.r.sensor.geolocation".

7.63.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Geolocation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GeolocationResURI" : {
      "get": {
```

```
        "description": "This Resource describes the properties associated with the current
geolocation coordinate.\nGeolocation is a geolocation coordinate data.\nThe Property \"latitude\" is
a device's current Latitude coordinate (degrees).\nThe Property \"longitude\" is a device's current
Longitude coordinate (degrees).\nThe Property \"alt\" is a device's current distance (metres) above
or below 'local' sea-level.\nThe Property \"accuracy\" is the accuracy level of the latitude and
longitude coordinates (metres).\nThe Property \"altitudeAccuracy\" is the accuracy level of the
altitude coordinates (metres).\nThe Property \"heading\" is a direction of travel of device
(degree).\nThe Property \"speed\" is a device's current velocity (metres per second).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current geolocation coordinates.",
              "x-example":
                {
                  "rt": ["oic.r.sensor.geolocation"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "latitude": 55.070859,
                  "longitude": -3.60512,
                  "alt": 12.07,
                  "accuracy": 65.0,
                  "altitudeAccuracy": 0.0,
                  "heading": 90.0,
                  "speed": 0.0
                },
              "schema": { "$ref": "#/definitions/Geolocation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Geolocation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.geolocation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "longitude": {
          "description": "The Device's Current Longitude coordinate (degrees).",
          "readOnly": true,
          "type": "number"
        },
        "heading": {
          "description": "The direction of travel of the Device (degree).",
          "maximum": 360,
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "latitude": {
          "description": "The Device's Current Latitude coordinate (degrees).",
          "readOnly": true,
          "type": "number"
        },
```

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```
        "altitudeAccuracy": {
          "description": "The accuracy level of the altitude coordinates (metres).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "alt": {
          "description": "The current distance (metres) above or below 'local' sea-level.",
          "readOnly": true,
          "type": "number"
        },
        "accuracy": {
          "description": "The accuracy level of the latitude and longitude coordinates (metres).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "speed": {
          "description": "The Device's current velocity (metres per second).",
          "minimum": 0,
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["latitude", "longitude", "alt"]
    }
  }
}
```

7.63.5 Property definition

Table 134 defines the Properties that are part of the "oic.r.sensor.geolocation" Resource Type.

Table 134 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.geolocation".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
longitude	number	Yes	Read Only	The Device's Current Longitude coordinate (degrees).

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heading	number	No	Read Only	The direction of travel of the Device (degree).
latitude	number	Yes	Read Only	The Device's Current Latitude coordinate (degrees).
altitudeAccuracy	number	No	Read Only	The accuracy level of the altitude coordinates (metres).
alt	number	Yes	Read Only	The current distance (metres) above or below 'local' sea-level.
accuracy	number	No	Read Only	The accuracy level of the latitude and longitude coordinates (metres).
speed	number	No	Read Only	The Device's current velocity (metres per second).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.63.6 CRUDN behaviour

Table 135 defines the CRUDN operations that are supported on the "oic.r.sensor.geolocation" Resource Type.

Table 135 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.geolocation".

Create	Read	Update	Delete	Notify
	get			observe

7.64 Height

7.64.1 Introduction

This Resource describes the Properties associated with height of an object's physical size.
The unit is a single value that is one of m, cm, ft or in.
If the unit Property is missing the default is meters [m].
The unit Property is a read-only value that is provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

7.64.2 Example URI

/HeightResURI

7.64.3 Resource type

The Resource Type is defined as: "oic.r.height".

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7.64.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Height",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeightResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with height of an object's
physical size.\nThe unit is a single value that is one of m, cm, ft or in.\nIf the unit Property is
missing the default is meters [m].\nThe unit Property is a read-only value that is provided by the
server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.height"
              ],
              "height": 1.8,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          }
        }
      },
      "post": {
        "description": "Sets the height.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {
              "$ref": "#/definitions/Height"
            },
            "x-example": {
              "height": 1.75,
              "units": "m"
            }
          }
        ],
```

```
        "responses": {
          "200": {
            "description": "Indicates that the height was successfully changed.\nThe new height is
provided in the response.",
            "x-example": {
              "height": 1.75,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          },
          "403": {
            "description": "Indicates that OCF Client sent an invalid Property value to the
Server.\nThe Server responds with the current Resource representation.",
            "x-example": {
              "height": 1.8,
              "units": "m"
            },
            "schema": {
              "$ref": "#/definitions/Height"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.a",
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Height": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.height"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "height": {
          "description": "Height of an object",
          "minimum": 0,
          "type": "number"
        },
        "units": {
          "description": "Height unit",
          "enum": [
            "m",
            "cm",
            "ft",
            "in"
          ],
          "readOnly": true,
          "type": "string",
          "default": "m"
```

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```
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "height"
      ]
    }
  }
}
```

7.64.5 Property definition

Table 136 defines the Properties that are part of the "oic.r.height" Resource Type.

Table 136 – The Property definitions of the Resource with type "rt" = "oic.r.height".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
height	number	Yes	Read Write	Height of an object
units	string	No	Read Only	Height unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

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precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.64.6 CRUDN behaviour

Table 137 defines the CRUDN operations that are supported on the "oic.r.height" Resource Type.

Table 137 – The CRUDN operations of the Resource with type "rt" = "oic.r.height".

Create	Read	Update	Delete	Notify
	get	post		observe

7.65 Weight

7.65.1 Introduction

This Resource describes the Properties associated with weight of an object.
The unit is a single value that is one of kg, g, lb or oz.
If the unit Property is missing the default is kilograms [kg].
The unit Property is a read-only value that is provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

7.65.2 Example URI

/WeightResURI

7.65.3 Resource type

The Resource Type is defined as: "oic.r.weight".

7.65.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Weight",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/WeightResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with weight of an
object.\nThe unit is a single value that is one of kg, g, lb or oz.\nIf the unit Property is missing
```

```
the default is kilograms [kg].\nThe unit Property is a read-only value that is provided by the
server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.weight"
              ],
              "weight": 80.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          }
        }
      },
      "post": {
        "description": "Sets the Weight.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": {
              "$ref": "#/definitions/Weight"
            },
            "x-example": {
              "weight": 75.0,
              "units": "kg"
            }
          }
        ],
        "responses": {
          "200": {
            "description": "Indicates that the weight was successfully changed.\nThe new weight is
provided in the response.",
            "x-example": {
              "weight": 75.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          },
          "403": {
            "description": "Indicates that OCF client sent an invalid Property value to the
Server.\nThe Server responds with the current resource representation.",
            "x-example": {
              "weight": 80.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/Weight"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
```


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```
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.a",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Weight": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.weight"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "weight": {
          "description": "Weight of an object",
          "minimum": 0.0,
          "type": "number"
        },
        "units": {
          "description": "Weight unit",
          "enum": [
            "kg",
            "g",
            "lb",
            "oz"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
```

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```
              "oic.if.s",
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "weight",
        "units"
      ]
    }
  }
}
```

7.65.5 Property definition

Table 138 defines the Properties that are part of the "oic.r.weight" Resource Type.

Table 138 – The Property definitions of the Resource with type "rt" = "oic.r.weight".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
weight	number	Yes	Read Write	Weight of an object
units	string	Yes	Read Only	Weight unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.65.6 CRUDN behaviour

Table 139 defines the CRUDN operations that are supported on the "oic.r.weight" Resource Type.

Table 139 – The CRUDN operations of the Resource with type "rt" = "oic.r.weight".

Create	Read	Update	Delete	Notify
	Get	post		observe

7.66 Air Quality

7.66.1 Introduction

This Resource describes a qualitative or measured contaminant that can be used to infer Air Quality.

The Property "valueType" indicates a qualitative or measured reading within the

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contaminantvalue Property.
The Property "contaminantvalue" can contain the actual sensed value with units per contaminant type.
Qualitative is a representative value within the range provided where the minimum value is minimum contamination and maximum value is maximum contamination for the specific contaminant.
The Property "contaminantvalue" contains the actual measured or qualitative level.
The Property "range" contains the allowed range for the value that is being reported.
If valueType is 'Measured' then the units for the contaminant types are as follows:
Methanol (also known as Formaldehyde): CH2O (ug/m^3),
Carbon Dioxide: CO2 (ppm),
Carbon Monoxide: CO (ppm),
Particulate Matter (less than 1 micron in diameter): PM1 (ug/m^3),
Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),
Particulate Matter (less than 10 microns in diameter): PM10 (ug/m^3),
Volatile Organic Compounds: VOC (ug/m^3),
Ozone: 03 (ppm), Nitrogen dioxide: NO2 (ppm), Sulphur dioxide: SO2 (ppm)

7.66.2 Example URI

/AirQualityResURI

7.66.3 Resource type

The Resource Type is defined as: "oic.r.airquality".

7.66.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality",
    "version": "2020-08-13",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019, 2020 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityResURI" : {
      "get": {
        "description": "This Resource describes a qualitative or measured contaminant that can be
used to infer Air Quality.\nThe Property \"valueType\" indicates a qualitative or measured reading
within the contaminantvalue Property.\nThe Property \"contaminantvalue\" can contain the actual
sensed value with units per contaminant type.\nQualitative is a representative value within the
range provided where the minimum value is minimum contamination and maximum value is maximum
contamination for the specific contaminant.\nThe Property \"contaminantvalue\" contains the actual
measured or qualitative level.\nThe Property \"range\" contains the allowed range for the value that
is being reported.\nIf valueType is 'Measured' then the units for the contaminant types are as
follows:\n Methanol (also known as Formaldehyde): CH2O (ug/m^3),\n Carbon Dioxide: CO2 (ppm),\n
Carbon Monoxide: CO (ppm),\n Particulate Matter (less than 1 micron in diameter): PM1 (ug/m^3),\n
Particulate Matter (less than 2.5 microns in diameter): PM2.5 (ug/m^3),\n Particulate Matter (less
than 10 microns in diameter): PM10 (ug/m^3),\n Volatile Organic Compounds: VOC (ug/m^3),\n Ozone: 03
(ppm), Nitrogen dioxide: NO2 (ppm), Sulphur dioxide: SO2 (ppm) ",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
```

```
            "description" : "",
            "x-example":
              {
                "rt": ["oic.r.airquality"],
                "if":  ["oic.if.s", "oic.if.baseline"],
                "contaminanttype": "CO",
                "valuetype": "Measured",
                "contaminantvalue": 10,
                "range": [0,500]
              },
            "schema": { "$ref": "#/definitions/AirQuality" }
          }
      }
    }
  }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "AirQuality" : {
      "properties": {
       "rt" : {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.airquality"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "contaminanttype": {
          "description": "The contaminant being measured.",
          "enum": [
            "CH2O",
            "CO2",
            "CO",
            "PM1",
            "PM2.5",
            "PM10",
            "VOC",
            "Smoke",
            "Odor",
            "AirPollution",
            "NO2",
            "SO2",
            "O3"
          ],
          "readOnly": true,
          "type": "string"
        },
         "valuetype": {
          "description": "The property that indicates whether the provided value is qualitative or
measured.",
          "enum": [
            "Qualitative",
            "Measured"
          ],
          "readOnly": true,
          "type": "string"
        },
        "contaminantvalue": {
          "description": "The measured or qualitative value for the contaminant.",
          "readOnly": true,
```

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```
          "type": "integer"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "if" : {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["contaminantvalue", "contaminanttype", "valuetype"]
    }
  }
}
```

7.66.5 Property definition

Table 140 defines the Properties that are part of the "oic.r.airquality" Resource Type.

Table 140 – The Property definitions of the Resource with type "rt" = "oic.r.airquality".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
contaminanttype	string	Yes	Read Only	The contaminant being measured.
valuetype	string	Yes	Read Only	The property that indicates whether the provided value is qualitative or measured.
contaminantvalue	integer	Yes	Read Only	The measured or qualitative value for the contaminant.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.66.6 CRUDN behaviour

Table 141 defines the CRUDN operations that are supported on the "oic.r.airquality" Resource Type.

Table 141 – The CRUDN operations of the Resource with type "rt" = "oic.r.airquality".

Create	Read	Update	Delete	Notify
	get			observe

7.67 Air Quality Collection

7.67.1 Introduction

This resource describes a sensor that provides the qualitative or measured Air Quality.
The resource is a collection of instances of oic.r.airquality detailing the individual exposed contaminant measures
There is one collection entry per contaminant type supported by the device. A device must expose at least one measured or qualitative value.
Retrieves the current air quality.

7.67.2 Example URI

/AirQualityCollectionResURI

7.67.3 Resource type

The Resource Type is defined as: "oic.r.airqualitycollection, oic.wk.col".

7.67.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Air Quality Collection",
    "version": "20190307",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/AirQualityCollectionResURI?if=oic.if.ll" : {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured
Air Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
```

```
              [
                {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/AirQuality-ll" }
          }
        }
      }
    },
    "/AirQualityCollectionResURI?if=oic.if.b": {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured
Air Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/AirQualityCOResURI",
                "rep": {
                  "contaminanttype": "CO",
                  "valuetype": "Measured",
                  "contaminantvalue": 10,
                  "range": [0,500]
                }
              },
              {
                "href": "/AirQualitySmokeResURI",
                "rep": {
                  "contaminanttype": "Smoke",
                  "valuetype": "Measured",
                  "contaminantvalue": 100,
                  "range": [0,5000]
                }
              }
            ],
            "schema": { "$ref": "#/definitions/AirQualityCollectionBatch-Retrieve" }
          }
        }
      }
    },
    "/AirQualityCollectionResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This resource describes a sensor that provides the qualitative or measured
Air Quality.\nThe resource is a collection of instances of oic.r.airquality detailing the individual
exposed contaminant measures\nThere is one collection entry per contaminant type supported by the
device. A device must expose at least one measured or qualitative value.\nRetrieves the current air
quality.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":   ["oic.r.airqualitycollection","oic.wk.col"],
                "if":   ["oic.if.baseline","oic.if.ll"],
                "links": [
                  {"href": "/myCOMeasureResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myCO2ResURI", "rt": ["oic.r.airquality"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
```

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```
            },
           "schema": { "$ref": "#/definitions/AirQuality" }
         }
       }
     }
   }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b","oic.if.baseline"]
    }
  },
  "definitions": {
    "AirQuality-ll": {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
```

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```
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.airquality"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "AirQuality": {
      "type": "object",
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.airqualitycollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "type": "array",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          }
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.airquality"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
```

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```
          "type": "array",
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      }
    },
    "AirQualityCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/AirQualityResURI.swagger.json#/definitio
ns/AirQuality"
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
  }
}
```

7.67.5 Property definition

Table 142 defines the Properties that are part of the "oic.r.airqualitycollection, oic.wk.col" Resource Type.

Table 142 – The Property definitions of the Resource with type "rt" = "oic.r.airqualitycollection, oic.wk.col".

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	

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ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
rt	array: see schema		Read Write	
links	array: see schema		Read Write	A set of simple or individual OCF Links.
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
rts	array: see schema		Read Write	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

7.67.6 CRUDN behaviour

Table 143 defines the CRUDN operations that are supported on the "oic.r.airqualitycollection, oic.wk.col" Resource Type.

Table 143 – The CRUDN operations of the Resource with type "rt" = "oic.r.airqualitycollection, oic.wk.col".

Create	Read	Update	Delete	Notify
	get			observe

7.68 Consumable

7.68.1 Introduction

This Resource specifies a thing that can be consumed such as filter material, printer toner etc
The Propert "typeofconsumable" is an enumeration defining the thing being consumed as defined by the Smart Home Device Specification
The Property "remaining" is an integer capturing the percentatge remaining life
The Property "orderpercentage" is an integer capturing the percentage life at which replacement or replenishment is recommended by the manufacturer
The Property "url" is a string containing a URL at which further information may be obtained with respect to the consumable.

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7.68.2 Example URI

/ConsumableResURI

7.68.3 Resource type

The Resource Type is defined as: "oic.r.consumable".

7.68.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Consumable",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumableResURI" : {
      "get": {
        "description": "This Resource specifies a thing that can be consumed such as filter
material, printer toner etc\nThe Propert \"typeofconsumable\" is an enumeration defining the thing
being consumed as defined by the Smart Home Device Specification\nThe Property \"remaining\" is an
integer capturing the percentatge remaining life\nThe Property \"orderpercentage\" is an integer
capturing the percentage life at which replacement or replenishment is recommended by the
manufacturer\nThe Property \"url\" is a string containing a URL at which further information may be
obtained with respect to the consumable.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.consumable"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "typeofconsumable": "tonerBlack",
                  "remaining": 20,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                },
              "schema": { "$ref": "#/definitions/consumable" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "consumable" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
```

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```
          "items": {
            "enum": ["oic.r.consumable"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "remaining": {
          "description": "The percentage remaining lifespan.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "typeofconsumable": {
          "description": "The thing that is being consumed.",
          "readOnly": true,
          "type": "string"
        },
        "url": {
          "description": "The URL at which additional ordering information may be found.",
          "format": "uri",
          "readOnly": true,
          "type": "string"
        },
        "orderpercentage": {
          "description": "The percentage at which re-ordering is recommended by the manufacturer.",
          "maximum": 100,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["typeofconsumable", "remaining"]
    }
  }
}
```

7.68.5 Property definition

Table 144 defines the Properties that are part of the "oic.r.consumable" Resource Type.

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Table 144 – The Property definitions of the Resource with type "rt" = "oic.r.consumable".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
remaining	integer	Yes	Read Only	The percentage remaining lifespan.
typeofconsumable	string	Yes	Read Only	The thing that is being consumed.
url	string	No	Read Only	The URL at which additional ordering information may be found.
orderpercentage	integer	No	Read Only	The percentage at which re-ordering is recommended by the manufacturer.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.68.6 CRUDN behaviour

Table 145 defines the CRUDN operations that are supported on the "oic.r.consumable" Resource Type.

Table 145 – The CRUDN operations of the Resource with type "rt" = "oic.r.consumable".

Create	Read	Update	Delete	Notify
	get			observe

7.69 Consumables

7.69.1 Introduction

This Resource specifies things that can be consumed such as filter material, printer toner etc
The resource is a Collection of instances of oic.r.consumable detailing the individual consumed items
supportedconsumables is the set of consumable types that this instance of the Resource supports

7.69.2 Example URI

/ConsumablesResURI

7.69.3 Resource type

The Resource Type is defined as: "oic.r.consumablecollection, oic.wk.col".

7.69.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Consumables",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
```

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```
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConsumablesResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/consumables-ll" }
          }
        }
      }
    },
    "/ConsumablesResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/tonerCyanResURI",
                "rep": {
                  "typeofconsumable": "tonerCyan",
                  "remaining": 70,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                }
              },
              {
                "href": "/tonerBlackResURI",
                "rep": {
                  "typeofconsumable": "tonerBlack",
                  "remaining": 20,
                  "orderpercentage": 10,
                  "url": "http://myreorderURL"
                }
              }
            ],
            "schema": { "$ref": "#/definitions/ConsumableCollectionBatch-Retrieve" }
```

```
          }
        }
      }
    },
    "/ConsumablesResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource specifies things that can be consumed such as filter material,
printer toner etc\nThe resource is a Collection of instances of oic.r.consumable detailing the
individual consumed items\nsupportedconsumables is the set of consumable types that this instance of
the Resource supports\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":               ["oic.r.consumablecollection","oic.wk.col"],
              "if":               ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "rts":              ["oic.r.consumable"],
              "supportedconsumables": ["tonerBlack","tonerCyan","tonerMagenta","tonerYellow"],
              "links": [
                {"href": "/myTonerBlackResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerCyanResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerMagentaResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myTonerYellowResURI", "rt": ["oic.r.consumable"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ]
            },
            "schema": { "$ref": "#/definitions/consumables" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "consumables-ll" : {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array"
    },
    "consumables": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.consumablecollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "supportedconsumables": {
          "description": "Array of possible consumables the device measures.",
          "items": {
```

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```
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "links": {
          "description": "A set of simple or individual OCF Links.",
          "items": {
            "$ref": "#/definitions/oic.oic-link"
          },
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.consumable"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object"
    },
    "ConsumableCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ConsumableResURI.swagger.json#/definitio
ns/consumable"
          }
        },
        "required": [
```

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```
          "href",
          "rep"
        ]
      }
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
```

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```
            "type": "string",
            "enum": ["oic.r.consumable"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    }
  }
}
```

7.69.5 Property definition

Table 146 defines the Properties that are part of the "oic.r.consumablecollection, oic.wk.col" Resource Type.

Table 146 – The Property definitions of the Resource with type "rt" = "oic.r.consumablecollection, oic.wk.col".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema		Read Only	
supportedconsumables	array: see schema		Read Only	Array of possible consumables the device measures.
links	array: see schema		Read Write	A set of simple or individual OCF Links.
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
rts	array: see schema		Read Only	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	

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rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource

7.69.6 CRUDN behaviour

Table 147 defines the CRUDN operations that are supported on the "oic.r.consumablecollection, oic.wk.col" Resource Type.

Table 147 – The CRUDN operations of the Resource with type "rt" = "oic.r.consumablecollection, oic.wk.col".

Create	Read	Update	Delete	Notify
	get			observe

7.70 Delay Defrost

7.70.1 Introduction

This Resource describes the delay defrost function as defined by the US Energy Star Specifications.
See Energy Star Refrigerator Requirements Version 5 Section 4).
(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)
The Property "status" is a boolean indicating whether the function is on, if off then defrost is scheduled as part of normal device operation.
The Property "startTime" is an RFC3339 full-time encoded start time for the interval in which defrost shall not occur.
The Property "stopTime" is an RFC3339 full-time encoded stop time for the interval in which defrost shall not occur.
The Property "interval" with additional range restrictions is the time in minutes of the period that starts at starttime (if not present the default is 240).
The Properties "stopTime" and "interval" are mutually exclusive; they cannot both be present in a Resource instance.

7.70.2 Example URI

/DelayDefrostResURI

7.70.3 Resource type

The Resource Type is defined as: "oic.r.delaydefrost".

7.70.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Delay Defrost",
    "version": "2021-01-26",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DelayDefrostResURI" : {
      "get": {
        "description": "This Resource describes the delay defrost function as defined by the US
Energy Star Specifications.\nSee Energy Star Refrigerator Requirements Version 5 Section
4).\n(https://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Final%20Version%
205.0%20Residential%20Refrigerators%20and%20Freezers%20Program%20Requirements.pdf)\nThe Property
\"status\" is a boolean indicating whether the function is on, if off then defrost is scheduled as
part of normal device operation.\nThe Property \"startTime\" is an RFC3339 full-time encoded start
time for the interval in which defrost shall not occur.\nThe Property \"stopTime\" is an RFC3339
full-time encoded stop time for the interval in which defrost shall not occur.\nThe Property
\"interval\" with additional range restrictions is the time in minutes of the period that starts at
starttime (if not present the default is 240).\nThe Properties \"stopTime\" and \"interval\" are
mutually exclusive; they cannot both be present in a Resource instance.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": ["oic.r.delaydefrost"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "startTime": "06:00:00Z",
                  "status": false
                },
              "schema": { "$ref": "#/definitions/DelayDefrost" }
            }
        }
      },
      "post": {
        "description": "Activates the desired Delay Defrost functions\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DelayDefrost-Update" },
            "x-example":
              {
                "status": true,
                "startTime": "06:00:00Z",
                "interval": 180
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the DelayDefrost function was changed.\nThe new
representation may be provided in the response.\n",
              "x-example":
                {
                  "status": true,
                  "startTime": "06:00:00Z",
                  "interval": 180
                }
                ,
              "schema": { "$ref": "#/definitions/DelayDefrost" }
            },
            "403": {
              "description" : "Indicates the update to the time properties was rejected.\nReasons
```

```
for rejection:\n  invalid time entry\nThe current unchanged representation may be provided in the
response.\n",
              "x-example":
                {
                  "status": true,
                  "startTime": "06:00:00Z",
                  "interval": 180
                },
              "schema": { "$ref": "#/definitions/DelayDefrost" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "DelayDefrost" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.delaydefrost"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "Indicates whether any supported delay defrost function is active.",
          "type": "boolean"
        },
        "interval": {
          "description": "Defrost interval as defined by Energy Star.",
          "minimum": 1,
          "maximum": 1440,
          "default": 240,
          "type": "integer"
        },
        "stopTime": {
          "description": "Stop time for the time period, if present interval cannot be present.
This is the time of day at which the delay interval stops.",
          "type": "string",
          "format": "time"
        },
        "startTime": {
          "description": "Start time for the time period. This is the time of day at which the delay
interval starts.",
          "type": "string",
          "format": "time"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
```

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```
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["status"]
    },
    "DelayDefrost-Update" : {
      "properties": {
        "status": {
          "description": "Indicates whether any supported delay defrost function is active.",
          "type": "boolean"
        },
        "interval": {
          "description": "Defrost interval as defined by Energy Star.",
          "minimum": 1,
          "maximum": 1440,
          "default": 240,
          "type": "integer"
        },
        "stopTime": {
          "description": "Stop time for the time period, if present interval cannot be present.
This is the time of day at which the delay interval stops.",
          "type": "string",
          "format": "time"
        },
        "startTime": {
          "description": "Start time for the time period. This is the time of day at which the delay
interval starts.",
          "type": "string",
          "format": "time"
        }
      },
      "type": "object",
      "required": ["status"]
    }
  }
}
```

7.70.5 Property definition

Table 148 defines the Properties that are part of the "oic.r.delaydefrost" Resource Type.

Table 148 – The Property definitions of the Resource with type "rt" = "oic.r.delaydefrost".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	boolean	Yes	Read Write	Indicates whether any supported delay defrost function is active.
interval	integer	No	Read Write	Defrost interval as defined by Energy Star.
stopTime	string	No	Read Write	Stop time for the time period, if present interval cannot be present. This is the time of

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				day at which the delay interval stops.
startTime	string	No	Read Write	Start time for the time period. This is the time of day at which the delay interval starts.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
status	boolean	Yes	Read Write	Indicates whether any supported delay defrost function is active.
interval	integer	No	Read Write	Defrost interval as defined by Energy Star.
stopTime	string	No	Read Write	Stop time for the time period, if present interval cannot be present. This is the time of day at which the delay interval stops.
startTime	string	No	Read Write	Start time for the time period. This is the time of day at which the delay interval starts.

7.70.6 CRUDN behaviour

Table 149 defines the CRUDN operations that are supported on the "oic.r.delaydefrost" Resource Type.

Table 149 – The CRUDN operations of the Resource with type "rt" = "oic.r.delaydefrost".

Create	Read	Update	Delete	Notify
	get	post		observe

7.71 Eco Mode

7.71.1 Introduction

This Resource specifies the supported and currently active Eco Mode of a Device
The Resource is a deriviative of the Mode Resource (oic.r.mode) with a restriction that the population of supportedmodes and modes Properties is restricted to the set of values: "disabled","enabled","notsupported".
The adminforced Property indicates that the value has been set by another party (e.g. via some offboard Smart Energy interaction)

7.71.2 Example URI

/EcomodeResURI

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7.71.3 Resource type

The Resource Type is defined as: "oic.r.ecomode".

7.71.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Eco Mode",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EcomodeResURI" : {
      "get": {
        "description": "This Resource specifies the supported and currently active Eco Mode of a
Device\nThe Resource is a deriviative of the Mode Resource (oic.r.mode) with a restriction that the
population of supportedmodes and modes Properties is restricted to the set of
values:\n\"disabled\",\"enabled\",\"notsupported\".\nThe adminforced Property indicates that the
value has been set by another party (e.g. via some offboard Smart Energy interaction)\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.ecomode"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "supportedModes": ["disabled","enabled"],
                  "modes": ["disabled"],
                  "adminforced": false
                },
              "schema": { "$ref": "#/definitions/ecomode" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ecomode-update" },
            "x-example":
              {
                "modes": ["enabled"]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "modes": ["enabled"]
                },
```

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```
            "schema": { "$ref": "#/definitions/ecomode-update" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ecomode" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.ecomode"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "modes": {
          "description": "The array of the currently active mode(s).",
          "items": {
            "enum": ["disabled", "enabled", "notsupported"],
            "type": "string"
          },
          "uniqueItems": true,
          "type": "array"
        },
        "supportedModes": {
          "description": "The array of possible modes the device supports.",
          "items": {
            "enum": ["disabled", "enabled", "notsupported"],
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "adminforced": {
          "description": "The indicator that the current mode of operation has been forced by admin
action.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
```

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```
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["supportedModes", "modes"]
    },
    "ecomode-update" : {
      "properties": {
        "modes": {
          "description": "The desired mode.",
          "items": {
            "enum": ["disabled", "enabled", "notsupported"],
            "type": "string"
          },
          "type": "array"
        }
      },
      "type": "object",
     "required": ["modes"]
    }
  }
}
```

7.71.5 Property definition

Table 150 defines the Properties that are part of the "oic.r.ecomode" Resource Type.

Table 150 – The Property definitions of the Resource with type "rt" = "oic.r.ecomode".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
modes	array: see schema	Yes	Read Write	The array of the currently active mode(s).
supportedModes	array: see schema	Yes	Read Only	The array of possible modes the device supports.
adminforced	boolean	No	Read Only	The indicator that the current mode of operation has been forced by admin action.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
modes	array: see schema	Yes	Read Write	The desired mode.

7.71.6 CRUDN behaviour

Table 151 defines the CRUDN operations that are supported on the "oic.r.ecomode" Resource Type.

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Table 151 – The CRUDN operations of the Resource with type "rt" = "oic.r.ecomode".

Create	Read	Update	Delete	Notify
	get	post		observe

7.72 Heating Zone

7.72.1 Introduction

This Resource provides information about the status of a (single) heating zone of a Cook-Top. It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).
The Property "maxheatinglevel" defines the max level for the heating zone
The Property "heatinglevel" is the current heating level of the zone
For each element, the value range is from 0 (indication that the zone is not heating) to "maxheatinglevel".

7.72.2 Example URI

/HeatingZoneResURI

7.72.3 Resource type

The Resource Type is defined as: "oic.r.heatingzone".

7.72.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneResURI" : {
      "get": {
        "description": "This Resource provides information about the status of a (single) heating
zone of a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically
(i.e. the device implements pot recognition).\nThe Property \"maxheatinglevel\" defines the max
level for the heating zone\nThe Property \"heatinglevel\" is the current heating level of the zone\n
For each element, the value range is from 0 (indication that the zone is not heating) to
\"maxheatinglevel\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current heating zone information.",
              "x-example":
                {
                  "rt": ["oic.r.heatingzone"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "maxheatinglevel": 6,
                  "heatinglevel": 0
                },
              "schema": { "$ref": "#/definitions/HeatingZone" }
            }
```

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```
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "HeatingZone" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.heatingzone"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "heatinglevel": {
          "description": "The current heating level for the zone.",
          "readOnly": true,
          "type": "integer"
        },
        "maxheatinglevel": {
          "description": "The maximum heating level for the zone.",
          "readOnly": true,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["maxheatinglevel", "heatinglevel"]
    }
  }
}
```

7.72.5 Property definition

Table 152 defines the Properties that are part of the "oic.r.heatingzone" Resource Type.

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Table 152 – The Property definitions of the Resource with type "rt" = "oic.r.heatingzone".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
heatinglevel	integer	Yes	Read Only	The current heating level for the zone.
maxheatinglevel	integer	Yes	Read Only	The maximum heating level for the zone.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.72.6 CRUDN behaviour

Table 153 defines the CRUDN operations that are supported on the "oic.r.heatingzone" Resource Type.

Table 153 – The CRUDN operations of the Resource with type "rt" = "oic.r.heatingzone".

Create	Read	Update	Delete	Notify
	get			observe

7.73 Heating Zone Collection

7.73.1 Introduction

This Resource provides information about the status of the heating zones of a Cook-Top.
It describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the device implements pot recognition).
The resource is a Collection of instances of oic.r.heatingzone detailing the individual cooktop zones
Retrieves the current heating zone information.

7.73.2 Example URI

/HeatingZoneResURI

7.73.3 Resource type

The Resource Type is defined as: "oic.r.heatingzonecollection, oic.wk.col".

7.73.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heating Zone Collection",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
```

```
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HeatingZoneResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of
a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              [
                {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
              ],
            "schema": { "$ref": "#/definitions/HeatingZone-ll" }
          }
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of
a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":  [
              {
                "href": "/heatingZoneLeftResURI",
                "rep": {
                  "maxheatinglevel": 6,
                  "heatinglevel": 0
                }
              },
              {
                "href": "/heatingZoneRightResURI",
                "rep": {
                  "maxheatinglevel": 6,
                  "heatinglevel": 3
                }
              }
            ],
            "schema": { "$ref": "#/definitions/HeatingZoneCollectionBatch-Retrieve" }
          }
        }
      }
    },
    "/HeatingZoneResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource provides information about the status of the heating zones of
a Cook-Top.\nIt describes the case of a Cook-Top whose zones can be activated dynamically (i.e. the
device implements pot recognition).\nThe resource is a Collection of instances of oic.r.heatingzone
detailing the individual cooktop zones\nRetrieves the current heating zone information.\n",
        "parameters": [
```

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```
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "rt":    ["oic.r.heatingzonecollection","oic.wk.col"],
                "if":    ["oic.if.ll","oic.if.b","oic.if.baseline"],
                "rts":   ["oic.r.heatingzone"],
                "links": [
                  {"href": "/myZone1ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone2ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone3ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]},
                  {"href": "/myZone4ResURI", "rt": ["oic.r.heatingzone"], "if":
["oic.if.s","oic.if.baseline"], "eps": [{"ep": "coaps://[fe80::b1d6]:1122"}]}
                ]
              },
            "schema": { "$ref": "#/definitions/HeatingZone" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    }
  },
  "definitions": {
    "HeatingZone-ll" : {
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true
    },
    "oic.oic-link": {
      "type": "object",
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
```

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```
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        },
        "if": {
          "description": "The OCF Interfaces supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "type": "array",
          "readOnly": true
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.heatingzone"]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ]
    },
    "HeatingZone" : {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.heatingzonecollection",
              "oic.wk.col"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true
        },
        "links": {
          "items": {
```

```
            "$ref": "#/definitions/oic.oic-link"
          },
          "type": "array",
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts": {
          "items": {
            "enum": ["oic.r.heatingzone"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object"
    },
    "HeatingZoneCollectionBatch-Retrieve" : {
      "type": "array",
      "minItems": 1,
      "uniqueItems": true,
      "items": {
        "type": "object",
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeatingZoneResURI.swagger.json#/definiti
ons/HeatingZone"
          }
        },
        "required": [
          "href",
          "rep"
        ]
      }
    }
```

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```
    }
}
```

7.73.5 Property definition

Table 154 defines the Properties that are part of the "oic.r.heatingzonecollection, oic.wk.col" Resource Type.

Table 154 – The Property definitions of the Resource with type "rt" = "oic.r.heatingzonecollection, oic.wk.col".

Property name	Value type	Mandatory	Access mode	Description
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interfaces supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
rt	array: see schema		Read Write	
links	array: see schema		Read Only	
n	multiple types: see schema		Read Write	
id	multiple types: see schema		Read Write	
rts	array: see schema		Read Only	
if	array: see schema		Read Only	The OCF Interfaces supported by this Resource
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	

7.73.6 CRUDN behaviour

Table 155 defines the CRUDN operations that are supported on the "oic.r.heatingzonecollection, oic.wk.col" Resource Type.

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Table 155 – The CRUDN operations of the Resource with type "rt" = "oic.r.heatingzonecollection, oic.wk.col".

Create	Read	Update	Delete	Notify
	get			observe

7.74 Selectable Levels

7.74.1 Introduction

This Resource provides a set of device defined levels that can be selected for an operation.
For example where a humidifier has a discrete set that model different humidity levels that can be set.
The Property "availablelevels" is an array of the levels that can be selected, these can be a number or an integer (as subset of integer).
The Property "targetlevel" is the level that has currently been selected and is written to in order to select a new level.
When retrieved the targetlevel provides the actual value that has been selected.

7.74.2 Example URI

/SelectableLevelsResURI

7.74.3 Resource type

The Resource Type is defined as: "oic.r.selectablelevels".

7.74.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Selectable Levels",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SelectableLevelsResURI" : {
      "get": {
        "description": "This Resource provides a set of device defined levels that can be selected
for an operation.\nFor example where a humidifier has a discrete set that model different humidity
levels that can be set.\nThe Property \"availablelevels\" is an array of the levels that can be
selected, these can be a number or an integer (as subset of integer).\nThe Property \"targetlevel\"
is the level that has currently been selected and is written to in order to select a new
level.\nWhen retrieved the targetlevel provides the actual value that has been selected.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Example is using integers for selection levels.",
              "x-example":
                {
                  "rt": ["oic.r.selectablelevels"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "availablelevels":[0, 2, 4, 6, 8],
                  "targetlevel": 2
```

```
              },
              "schema": { "$ref": "#/definitions/SelectableLevels" }
            }
        }
      },
      "post": {
        "description": "Sets the current level from the set \"availablelevels\".",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/UpdateSchema" },
            "x-example":
              {
                "targetlevel": 4
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "targetlevel": 4
                },
              "schema": { "$ref": "#/definitions/UpdateSchema" }
            },
            "403": {
              "description" : "Generated by a OCF Server when an attempt is made to update to a
targetlevel that is not in the set of availablelevels",
              "x-example":
                {
                  "availablelevels":[0, 2, 4, 6, 8],
                  "targetlevel": 2
                },
              "schema": { "$ref": "#/definitions/SelectableLevels" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SelectableLevels" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.selectablelevels"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "targetlevel": {
          "description": "The target level from the available selectable set.",
          "type": "number"
        },
        "availablelevels": {
          "description": "The set of levels to select from.",
```

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```
          "items": {
             "type": "number"
          },
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["availablelevels", "targetlevel"]
    },
    "UpdateSchema" : {
      "properties": {
        "targetlevel": {
          "description": "The target level from the available selectable set",
          "type": "number"
        }
      },
      "type": "object",
      "required": ["targetlevel"]
    }
  }
}
```

7.74.5 Property definition

Table 156 defines the Properties that are part of the "oic.r.selectablelevels" Resource Type.

Table 156 – The Property definitions of the Resource with type "rt" = "oic.r.selectablelevels".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
targetlevel	number	Yes	Read Write	The target level from the available selectable set.
availablelevels	array: see schema	Yes	Read Only	The set of levels to select from.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
targetlevel	number	Yes	Read Write	The target level from the available selectable set

7.74.6 CRUDN behaviour

Table 157 defines the CRUDN operations that are supported on the "oic.r.selectablelevels" Resource Type.

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Table 157 – The CRUDN operations of the Resource with type "rt" = "oic.r.selectablelevels".

Create	Read	Update	Delete	Notify
	get	post		observe

7.75 Value Conditional

7.75.1 Introduction

This Resource specifies conditions that can be applied to an observed value in any Resource. These conditions are applied by the OCF Server exposing the Resource to any generated notifications because of subscriptions to the Resource.
A unicast RETRIEVE to the Resource will receive the most recent value; which may not be the most recent notified value.
An OCF Server exposes this Resource in association with the Resource conveying the observed value.
This is done by means of a new Resource instance with an RT of ["oic.r.<thing being observed>", "oic.r.value.conditional"], e.g ["oic.r.temperature", "oic.r.value.conditional"].
The Property "threshold" is the amount by which the thing being observed must change before a notification is sent.
The Property "minnotifyperiod" is the minimum time in ms (milliseconds) that must elapse before a notification is sent.
If the maxnotifyperiod (time in ms (milliseconds)) elapses then a notification must be sent.
The Property "maxnotifyperiod" is a timer that resets each time a notification is sent.
A value of '0' for any of "threshold"," minnotifyperiod" or "maxnotifyperiod" means that the capability is supported but not active.

7.75.2 Example URI

/ValueConditionalResURI

7.75.3 Resource type

The Resource Type is defined as: "oic.r.value.conditional".

7.75.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Value Conditional",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ValueConditionalResURI" : {
      "get": {
        "description": "This Resource specifies conditions that can be applied to an observed value
in any Resource.\nThese conditions are applied by the OCF Server exposing the Resource to any
generated notifications because of subscriptions to the Resource.\nA unicast RETRIEVE to the
Resource will receive the most recent value; which may not be the most recent notified value.\nAn
OCF Server exposes this Resource in association with the Resource conveying the observed
value.\nThis is done by means of a new Resource instance with an RT of [\"oic.r.<thing being
observed>\", \"oic.r.value.conditional\"], e.g [\"oic.r.temperature\",
```

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```
\"oic.r.value.conditional\"].\nThe Property \"threshold\" is the amount by which the thing being
observed must change before a notification is sent.\nThe Property \"minnotifyperiod\" is the minimum
time in ms (milliseconds) that must elapse before a notification is sent.\nIf the maxnotifyperiod
(time in ms (milliseconds)) elapses then a notification must be sent.\nThe Property
\"maxnotifyperiod\" is a timer that resets each time a notification is sent.\nA value of '0' for any
of \"threshold\",\" minnotifyperiod\" or \"maxnotifyperiod\" means that the capability is supported
but not active.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.value.conditional"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "threshold": 2,
                  "minnotifyperiod": 2000,
                  "maxnotifyperiod": 5000
                },
              "schema": { "$ref": "#/definitions/valueconditional" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/valueconditional" },
            "x-example":
              {
                "threshold": 2,
                "minnotifyperiod": 1500
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "threshold": 2,
                  "minnotifyperiod": 1500
                },
              "schema": { "$ref": "#/definitions/valueconditional" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "valueconditional" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.value.conditional"]
```

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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "maxnotifyperiod": {
          "description": "The maximum elapsed time in ms before a notification must be sent.",
          "minimum": 0,
          "type": "integer"
        },
        "minnotifyperiod": {
          "description": "The minimum elapsed time in ms before a notification is sent.",
          "minimum": 0,
          "type": "integer"
        },
        "threshold": {
          "description": "The amount by which the measured value must change before a notification
is sent.",
          "minimum": 0,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "anyOf": [
        {
          "required": ["threshold"]
        },
        {
          "required": ["minnotifyperiod"]
        },
        {
          "required": ["maxnotifyperiod"]
        }
      ],
      "type": "object"
    }
  }
}
```

7.75.5 Property definition

Table 158 defines the Properties that are part of the "oic.r.value.conditional" Resource Type.

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Table 158 – The Property definitions of the Resource with type "rt" = "oic.r.value.conditional".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
maxnotifyperiod	integer	Yes	Read Write	The maximum elapsed time in ms before a notification must be sent.
minnotifyperiod	integer	No	Read Write	The minimum elapsed time in ms before a notification is sent.
threshold	number	No	Read Write	The amount by which the measured value must change before a notification is sent.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.75.6 CRUDN behaviour

Table 159 defines the CRUDN operations that are supported on the "oic.r.value.conditional" Resource Type.

Table 159 – The CRUDN operations of the Resource with type "rt" = "oic.r.value.conditional".

Create	Read	Update	Delete	Notify
	get	post		observe

7.76 Colour Space Coordinates

7.76.1 Introduction

This Resource describes the colour using colour space co-ordinates.
The Property "csc" is the colour space coordinates in CIE colour space.
The first item in the array is the X coordinate.
The second item in the array is the Y coordinate.
If the Property "precision" is provided it applies to both the X and Y coordinates.
The Resource provides the colour using colour space coordinates.

7.76.2 Example URI

/example/ColourSpaceCoordinatesResURI

7.76.3 Resource type

The Resource Type is defined as: "oic.r.colour.csc".

7.76.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
```

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```
    "title": "Colour Space Coordinates",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/example/ColourSpaceCoordinatesResURI" : {
      "get": {
        "description": "This Resource describes the colour using colour space co-ordinates.\nThe
Property \"csc\" is the colour space coordinates in CIE colour space.\n  The first item in the array
is the X coordinate.\n  The second item in the array is the Y coordinate.\n  If the Property
\"precision\" is provided it applies to both the X and Y coordinates.\nThe Resource provides the
colour using colour space coordinates.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.csc"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "csc": [0.41, 0.51]
                },
              "schema": { "$ref": "#/definitions/ColourCSC" }
            }
        }
      },
      "post": {
        "description": "Sets current colour space coordinates\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourCSC" },
            "x-example":
              {
                "csc": [0.40, 0.70]
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "csc": [0.40, 0.70]
                },
              "schema": {"$ref": "#/definitions/ColourCSC" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
```

```
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourCSC" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.csc"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "csc": {
          "description": "The X and Y coordinates of the colour in CIE colour space.",
          "items": {
            "maximum": 1,
            "minimum": 0,
            "type": "number"
          },
          "maxItems": 2,
          "minItems": 2,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["csc"]
    }
  }
}
```

7.76.5 Property definition

Table 160 defines the Properties that are part of the "oic.r.colour.csc" Resource Type.

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Table 160 – The Property definitions of the Resource with type "rt" = "oic.r.colour.csc".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
csc	array: see schema	Yes	Read Write	The X and Y coordinates of the colour in CIE colour space.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.76.6 CRUDN behaviour

Table 161 defines the CRUDN operations that are supported on the "oic.r.colour.csc" Resource Type.

Table 161 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.csc".

Create	Read	Update	Delete	Notify
	get	post		observe

7.77 Colour Temperature

7.77.1 Introduction

This Resource describes the colour using colour temperature conventions.
The Property "ct" is the Mired colour temperature.
The equivalent value in Kelvin is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)
THe Resource provides the colour using colour temperature conventions.

7.77.2 Example URI

/example/ColourTemperatureResURI

7.77.3 Resource type

The Resource Type is defined as: "oic.r.colour.colourtemperature".

7.77.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Temperature",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
```

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```
  "produces": ["application/json"],
  "paths": {
    "/example/ColourTemperatureResURI" : {
      "get": {
        "description": "This Resource describes the colour using colour temperature
conventions.\nThe Property \"ct\" is the Mired colour temperature.\nThe equivalent value in Kelvin
is obtained by Colour Temp(K) = 1,000,000/Colour Temp(Mired)\nTHe Resource provides the colour using
colour temperature conventions.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.colourtemperature"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "ct": 457
                },
              "schema": { "$ref": "#/definitions/ColourTemp" }
            }
        }
      },
      "post": {
        "description": "Sets current colour temperature value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourTemp" },
            "x-example":
              {
                "ct": 457
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "ct": 467
                },
              "schema": { "$ref": "#/definitions/ColourTemp" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourTemp" : {
      "properties": {
        "rt" :
                {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.colour.colourtemperature"]
          },
          "minItems": 1,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ct": {
          "description": "The Mired colour temperature.",
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["ct"]
    }
  }
}
```

7.77.5 Property definition

Table 162 defines the Properties that are part of the "oic.r.colour.colourtemperature" Resource Type.

Table 162 – The Property definitions of the Resource with type "rt" = "oic.r.colour.colourtemperature".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
ct	integer	Yes	Read Write	The Mired colour temperature.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.77.6 CRUDN behaviour

Table 163 defines the CRUDN operations that are supported on the "oic.r.colour.colourtemperature" Resource Type.

Table 163 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.colourtemperature".

Create	Read	Update	Delete	Notify
	get	post		observe

7.78 Colour Hue and Saturation

7.78.1 Introduction

This Resource describes the colour using hue-saturation conventions.
The Property "hue" is the hue angle, it is a number value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
A Device that does not support fractional hue angles can provide integer values.
If Property "precision" is provided it applies to the hue angle.
The Property "saturation" is an integer value as defined by the CIECAM02 model definition (see reference [CIE CIE159:2004]).
The Property "saturation" can be converted to a percentage by saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not present.
The Property "maximumsaturation" is the upper bound on the saturation supported by the Device. If not present the maximum value for saturation is 32767.
The Resource provides the colour using hue and saturation conventions.

7.78.2 Example URI

/example/ColourHueSaturationResURI

7.78.3 Resource type

The Resource Type is defined as: "oic.r.colour.hs".

7.78.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Hue and Saturation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
```

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```
  "paths": {
    "/example/ColourHueSaturationResURI" : {
      "get": {
        "description": "This Resource describes the colour using hue-saturation conventions.\nThe
Property \"hue\" is the hue angle, it is a number value as defined by the CIECAM02 model definition
(see reference [CIE CIE159:2004]).\nA Device that does not support fractional hue angles can provide
integer values.\nIf Property \"precision\" is provided it applies to the hue angle.\nThe Property
\"saturation\" is an integer value as defined by the CIECAM02 model definition (see reference [CIE
CIE159:2004]).\n The Property \"saturation\" can be converted to a percentage by
saturation/maximumsaturation X 100; where maximumsaturation is 32767 if the Property itself is not
present.\nThe Property \"maximumsaturation\" is the upper bound on the saturation supported by the
Device.\nIf not present the maximum value for saturation is 32767.\nThe Resource provides the colour
using hue and saturation conventions.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.colour.hs"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "hue": 300.0,
                  "saturation": 212,
                  "maximumsaturation": 1000
                },
              "schema": { "$ref": "#/definitions/ColourHS" }
            }
        }
      },
      "post": {
        "description": "Sets current colour hue and saturation values.\nAt least one of hue or
saturation shall be provided in the payload.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ColourHS" },
            "x-example":
              {
                "hue": 300.0,
                "saturation": 212
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "hue": 300.0,
                  "saturation":  212
                },
              "schema": { "$ref": "#/definitions/ColourHS" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ColourHS" : {
```

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```
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.hs"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "hue": {
          "description": "The hue angle as defined by the CIECAM02 model definition.",
          "maximum": 360.0,
          "minimum": 0.0,
          "type": "number"
        },
        "saturation": {
          "description": "The saturation as defined by the CIECAM02 model definition.",
          "maximum": 32767,
          "minimum": 0,
          "type": "integer"
        },
        "maximumsaturation": {
          "description": "The maximum supported value of \"saturation\" for this Device.",
          "maximum": 32767,
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "n": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["hue", "saturation"]
    }
  }
}
```

7.78.5 Property definition

Table 164 defines the Properties that are part of the "oic.r.colour.hs" Resource Type.

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Table 164 – The Property definitions of the Resource with type "rt" = "oic.r.colour.hs".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
hue	number	Yes	Read Write	The hue angle as defined by the CIECAM02 model definition.
saturation	integer	Yes	Read Write	The saturation as defined by the CIECAM02 model definition.
maximumsaturation	integer	No	Read Only	The maximum supported value of "saturation" for this Device.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.78.6 CRUDN behaviour

Table 165 defines the CRUDN operations that are supported on the "oic.r.colour.hs" Resource Type.

Table 165 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.hs".

Create	Read	Update	Delete	Notify
	get	post		observe

7.79 Battery Material

7.79.1 Introduction

This Resource describes the battery material represented as an enumerated set of strings.

7.79.2 Example URI

/BatteryMaterialResURI

7.79.3 Resource type

The Resource Type is defined as: "oic.r.batterymaterial".

7.79.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Battery Material",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
```

```
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BatteryMaterialResURI" : {
      "get": {
        "description": "This Resource describes the battery material represented as an enumerated
set of strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                    "rt": ["oic.r.batterymaterial"],
                    "if": ["oic.if.s", "oic.if.baseline"],
                    "material": "Alkaline"
                },
              "schema": { "$ref": "#/definitions/BatteryMaterial" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "BatteryMaterial" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.batterymaterial"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "material": {
          "description": "The battery construction material (type).",
          "enum": [
            "Alkaline",
            "Aluminium Air",
            "Aluminium Ion",
            "Atomic Betavoltaics",
            "Atomic Optoelectric Nuclear",
            "Atomic Nuclear",
            "Bunsen Cell",
            "Chromic Acid Cell",
            "Poggendorff Cell",
            "Clark Cell",
            "Daniell Cell",
            "Dry Cell",
            "Earth",
            "Flow",
            "Flow Vanadium Redox",
            "Flow Zinc Bromine",
            "Flow Zinc Cerium",
```

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```
            "Frog",
            "Fuel",
            "Galvanic Cell",
            "Glass",
            "Grove Cell",
            "Lead Acid",
            "Lead Acid Deep Cycle",
            "Lead Acid VRLA",
            "Lead Acid AGM",
            "Lead Acid Gel",
            "Leclanche Cell",
            "Lemon Potato",
            "Lithium",
            "Lithium Air",
            "Lithium Ion",
            "Lithium Ion Cobalt Oxide (ICR)",
            "Lithium Ion Manganese Oxide (IMR)",
            "Lithium Ion Polymer",
            "Lithium Iron Phosphate",
            "Lithium Sulfur",
            "Lithium Titanate",
            "Lithium Ion Thin Film",
            "Magnesium",
            "Magnesium Ion",
            "Mercury",
            "Molten Salt",
            "Nickel Cadmium",
            "Nickel Cadmium Vented Cell",
            "Nickel Hydrogen",
            "Nickel Iron ",
            "Nickel Metal Hydride",
            "Nickel Metal Hydride Low Self-Discharge",
            "Nickel Oxyhydroxide",
            "Nickel Oxyride",
            "Nickel Zinc",
            "Organic Radical",
            "Paper",
            "Polymer Based",
            "Polysulfide Bromide",
            "Potassium Ion",
            "Pulvermachers Chain",
            "Silicon Air",
            "Silver Calcium",
            "Silver Oxide",
            "Silver Zinc",
            "Sodium Ion",
            "Sodium Sulfur",
            "Solid State",
            "Sugar",
            "Super Iron",
            "UltraBattery",
            "Voltaic Pile",
            "Voltaic Pile Penny",
            "Voltaic Pile Trough",
            "Water Activated",
            "Weston Cell",
            "Zinc Air",
            "Zinc Carbon",
            "Zinc Chloride",
            "Zinc Ion",
            "Unknown"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["material"]
    }
  }
}
```

7.79.5 Property definition

Table 166 defines the Properties that are part of the "oic.r.batterymaterial" Resource Type.

Table 166 – The Property definitions of the Resource with type "rt" = "oic.r.batterymaterial".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
material	string	Yes	Read Only	The battery construction material (type).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.79.6 CRUDN behaviour

Table 167 defines the CRUDN operations that are supported on the "oic.r.batterymaterial" Resource Type.

Table 167 – The CRUDN operations of the Resource with type "rt" = "oic.r.batterymaterial".

Create	Read	Update	Delete	Notify
	get			observe

7.80 Brewing

7.80.1 Introduction

This Resource describes the attributes associated with brewing. This resource is used for configuration only. The Operation of the Device is handled independently of this Resource. The amount requested is in ml. The strength of a brewed drink is an integer, the range of which may be enforced by the presence of a strengthrange Property.

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7.80.2 Example URI

/BrewingResURI

7.80.3 Resource type

The Resource Type is defined as: "oic.r.brewing".

7.80.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Brewing",
    "version": "20190222",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/BrewingResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with brewing. This
resource is used for configuration only. The Operation of the Device is handled independently of
this Resource. The amount requested is in ml. The strength of a brewed drink is an integer, the
range of which may be enforced by the presence of a strengthrange Property.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.brewing"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "amountrequested": 120,
                  "strength": 8,
                  "strengthrange": [1, 10]
                },
              "schema": { "$ref": "#/definitions/Brewing" }
            }
        }
      },
      "post": {
        "description": "Sets the brewing values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Brewing" },
            "x-example":
              {
                "amountrequested": 120,
                "strength": 8
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
```

```
                {
                  "amountrequested": 120,
                  "strength": 8
                }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Brewing" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.brewing"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "strength": {
          "description": "The strength of a brewed drink.",
          "type": "integer"
        },
        "amountrequested": {
          "description": "The amount requested in ml.",
          "type": "integer"
        },
        "strengthrange": {
          "items": {
            "type": "integer"
          },
          "maxItems": 2,
          "minItems": 2,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        }
      },
      "type": "object",
      "required": ["amountrequested"]
    }
  }
}
```

7.80.5 Property definition

Table 168 defines the Properties that are part of the "oic.r.brewing" Resource Type.

Table 168 – The Property definitions of the Resource with type "rt" = "oic.r.brewing".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
strength	integer	No	Read Write	The strength of a brewed drink.
amountrequested	integer	Yes	Read Write	The amount requested in ml.
strengthrange	array: see schema	No	Read Only	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.80.6 CRUDN behaviour

Table 169 defines the CRUDN operations that are supported on the "oic.r.brewing" Resource Type.

Table 169 – The CRUDN operations of the Resource with type "rt" = "oic.r.brewing".

Create	Read	Update	Delete	Notify
	get	post		observe

7.81 Energy

7.81.1 Introduction

This Resource describes the attributes associated with electrical energy. This Resource can be used for either rated (read-only), desired (read-write) or measured (read-only) energy. The Property "voltage" is in Volts (V), The Property "current" in Amps (A), and The Property "frequency" is in Hertz (Hz).

7.81.2 Example URI

/EnergyResURI

7.81.3 Resource type

The Resource Type is defined as: "oic.r.energy.electrical".

7.81.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy",
    "version": "20190215",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with electrical energy.
This Resource can be used for either rated (read-only), desired (read-write) or measured (read-only)
energy. The Property \"voltage\" is in Volts (V), The Property \"current\" in Amps (A), and The
Property \"frequency\" is in Hertz (Hz).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Retrieves the current energy.",
              "x-example":
                {
                  "rt": ["oic.r.energy.electrical"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "voltage": 120.0,
                  "current": 5.0,
                  "frequency": 60.0
                },
              "schema": { "$ref": "#/definitions/Energy" }
            }
        }
      },
      "post": {
        "description": "Sets the desired energy values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/EnergyUpdate" },
            "x-example":
              {
                "desiredvoltage": 130.0,
                "desiredcurrent": 6.0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "desiredvoltage": 130.0,
                  "desiredcurrent": 6.0
                }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
```

```
    }
  },
  "definitions": {
    "Energy" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.electrical"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "desiredcurrent": {
          "description": "The desired electric current in Amps (A).",
          "type": "number"
        },
        "current": {
          "description": "The electric current in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "frequency": {
          "description": "The electric frequency in Hertz (Hz).",
          "readOnly": true,
          "type": "number"
        },
        "voltage": {
          "description": "The electric voltage in Volts (V).",
          "readOnly": true,
          "type": "number"
        },
        "desiredfrequency": {
          "description": "The desired electric frequency in Hertz (Hz).",
          "type": "number"
        },
        "desiredvoltage": {
          "description": "The desired electric voltage in Volts (V).",
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["voltage", "current", "frequency"]
    }
```

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```
    ,
    "EnergyUpdate" : {
      "properties": {
        "desiredcurrent": {
          "description": "The desired electric current in Amps (A).",
          "type": "number"
        },
        "desiredfrequency": {
          "description": "The desired electric frequency in Hertz (Hz).",
          "type": "number"
        },
        "desiredvoltage": {
          "description": "The desired electric voltage in Volts (V).",
          "type": "number"
        }
      },
      "anyOf": [
        {
          "required": ["desiredvoltage"]
        },
        {
          "required": ["desiredcurrent"]
        },
        {
          "required": ["desiredfrequency"]
        }
      ],
      "type": "object"
    }
  }
}
```

7.81.5 Property definition

Table 170 defines the Properties that are part of the "oic.r.energy.electrical" Resource Type.

Table 170 – The Property definitions of the Resource with type "rt" = "oic.r.energy.electrical".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
desiredcurrent	number	No	Read Write	The desired electric current in Amps (A).
current	number	Yes	Read Only	The electric current in Amps (A).
frequency	number	Yes	Read Only	The electric frequency in Hertz (Hz).
voltage	number	Yes	Read Only	The electric voltage in Volts (V).
desiredfrequency	number	No	Read Write	The desired electric frequency in Hertz (Hz).
desiredvoltage	number	No	Read Write	The desired electric voltage in Volts (V).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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desiredcurrent	number	No	Read Write	The desired electric current in Amps (A).
desiredfrequency	number	Yes	Read Write	The desired electric frequency in Hertz (Hz).
desiredvoltage	number	No	Read Write	The desired electric voltage in Volts (V).

7.81.6 CRUDN behaviour

Table 171 defines the CRUDN operations that are supported on the "oic.r.energy.electrical" Resource Type.

Table 171 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.electrical".

Create	Read	Update	Delete	Notify
	get	post		observe

7.82 Energy Generation

7.82.1 Introduction

This Resource describes the attributes associated with energy generation
The Property "energygenerated" is a number that provides the energy generated in Watt-hour(Wh).

7.82.2 Example URI

/EnergyGenerationResURI

7.82.3 Resource type

The Resource Type is defined as: "oic.r.energy.generation".

7.82.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Energy Generation",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EnergyGenerationResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with energy
generation\nThe Property \"energygenerated\" is a number that provides the energy generated in Watt-
hour(Wh).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description": "",
```

```
              "x-example":
                {
                  "rt": ["oic.r.energy.generation"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "energygenerated": 3000.00
                },
              "schema": { "$ref": "#/definitions/EnergyGeneration" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "EnergyGeneration" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.energy.generation"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "energygenerated": {
          "description": "The energy generated in Watt-hour(Wh).",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["energygenerated"]
    }
  }
}
```

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7.82.5 Property definition

Table 172 defines the Properties that are part of the "oic.r.energy.generation" Resource Type.

Table 172 – The Property definitions of the Resource with type "rt" = "oic.r.energy.generation".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
energygenerated	number	Yes	Read Only	The energy generated in Watt-hour(Wh).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.82.6 CRUDN behaviour

Table 173 defines the CRUDN operations that are supported on the "oic.r.energy.generation" Resource Type.

Table 173 – The CRUDN operations of the Resource with type "rt" = "oic.r.energy.generation".

Create	Read	Update	Delete	Notify
	get			observe

7.83 Foaming

7.83.1 Introduction

This Resource describes the attributes associated with foaming. The Property "foamstrength" of the liquid is represented as an integer.
The foam strength is an integer, the range of which may be enforced by the presence of the Property "range".

7.83.2 Example URI

/FoamingResURI

7.83.3 Resource type

The Resource Type is defined as: "oic.r.foaming".

7.83.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Foaming",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
```

```
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/FoamingResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with foaming. The Property
\"foamstrength\" of the liquid is represented as an integer.\nThe foam strength is an integer, the
range of which may be enforced by the presence of the Property \"range\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of foaming.",
              "x-example":
                {
                  "rt": ["oic.r.foaming"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "foamstrength": 50,
                  "range": [0, 100]
                },
              "schema": { "$ref": "#/definitions/Foaming" }
            }
        }
      },
      "post": {
        "description": "Sets foaming value\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Foaming" },
            "x-example":
              {
                "foamstrength": 50
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "foamstrength": 50
                },
              "schema": { "$ref": "#/definitions/Foaming" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Foaming" : {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": ["oic.r.foaming"],
            "maxLength": 64,
            "type": "string"
```

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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "foamstrength": {
          "description": "The desired foaminess of the liquid.",
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["foamstrength"]
    }
  }
}
```

7.83.5 Property definition

Table 174 defines the Properties that are part of the "oic.r.foaming" Resource Type.

Table 174 – The Property definitions of the Resource with type "rt" = "oic.r.foaming".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
foamstrength	integer	Yes	Read Write	The desired foaminess of the liquid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource

7.83.6 CRUDN behaviour

Table 175 defines the CRUDN operations that are supported on the "oic.r.foaming" Resource Type.

Table 175 – The CRUDN operations of the Resource with type "rt" = "oic.r.foaming".

Create	Read	Update	Delete	Notify
	get	post		observe

7.84 Grinder

7.84.1 Introduction

This Resource describes the attributes associated with a grinder. The Property "coarseness" of the grounds is an integer. The higher the value, the less coarse. The Property "remaining" is a percentage that represents the unground material left.

7.84.2 Example URI

/GrinderResURI

7.84.3 Resource type

The Resource Type is defined as: "oic.r.grinder".

7.84.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Grinder",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GrinderResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with a grinder. The
Property \"coarseness\" of the grounds is an integer. The higher the value, the less coarse. The
Property \"remaining\" is a percentage that represents the unground material left.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the state of a grinder.",
              "x-example":
                {
                  "rt": ["oic.r.grinder"],
```

```
                "if": ["oic.if.rw", "oic.if.baseline"],
                "coarseness": 10,
                "remaining": 50
              },
            "schema": { "$ref": "#/definitions/Grinder" }
          }
      }
    },
    "post": {
      "description": "Sets grinding values.",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/GrinderUpdate" },
          "x-example":
            {
              "coarseness": 10
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "coarseness": 10
              },
            "schema": { "$ref": "#/definitions/GrinderUpdate" }
          }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "Grinder" : {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": ["oic.r.grinder"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "coarseness": {
        "description": "The desired coarseness when grinding.",
        "type": "integer"
      },
      "remaining": {
        "description": "The percentage of unground material left.",
        "maximum": 100,
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "n": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["coarseness"]
    },
    "GrinderUpdate" : {
      "properties": {
        "coarseness": {
          "description": "The desired coarseness when grinding.",
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["coarseness"]
    }
  }
}
```

7.84.5 Property definition

Table 176 defines the Properties that are part of the "oic.r.grinder" Resource Type.

Table 176 – The Property definitions of the Resource with type "rt" = "oic.r.grinder".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
coarseness	integer	Yes	Read Write	The desired coarseness when grinding.
remaining	integer	No	Read Only	The percentage of unground material left.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
coarseness	integer	Yes	Read Write	The desired coarseness when grinding.

7.84.6 CRUDN behaviour

Table 177 defines the CRUDN operations that are supported on the "oic.r.grinder" Resource Type.

Table 177 – The CRUDN operations of the Resource with type "rt" = "oic.r.grinder".

Create	Read	Update	Delete	Notify
	get	post		observe

7.85 Liquid Level

7.85.1 Introduction

This Resource describes the attributes associated with liquid level. The Property "currentlevel" and "desiredlevel" are defined in terms of a percentage. The behaviour of when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.

7.85.2 Example URI

/LiquidLevelResURI

7.85.3 Resource type

The Resource Type is defined as: "oic.r.liquid.level".

7.85.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Liquid Level",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/LiquidLevelResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with liquid level. The
Property \"currentlevel\" and \"desiredlevel\" are defined in terms of a percentage. The behaviour
of when the currentlevel and desiredlevel are not equal is determined by the device manufacturer.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
```

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```
            "description" : "RETRIEVES the state of liquid level.",
            "x-example":
              {
                "rt": ["oic.r.liquid.level"],
                "if": ["oic.if.rw", "oic.if.r", "oic.if.baseline"],
                "currentlevel": 60,
                "desiredlevel": 80
              },
            "schema": { "$ref": "#/definitions/LiquidLevel" }
          }
      }
    },
    "post": {
      "description": "Sets liquid level value.",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/LiquidLevelUpdate" },
          "x-example":
            {
              "desiredlevel": 80
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "",
            "x-example":
              {
                "desiredlevel": 80
              },
            "schema": { "$ref": "#/definitions/LiquidLevelUpdate" }
          }
      }
    }
  }
},
"parameters": {
  "interface" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw", "oic.if.r", "oic.if.baseline"]
  },
  "interface-rw" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw", "oic.if.baseline"]
  }
},
"definitions": {
  "LiquidLevel" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.liquid.level"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "currentlevel": {
        "description": "The current level of the liquid in percentage.",
        "maximum": 100,
```

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```
          "minimum": 0,
          "readOnly": true,
          "type": "integer"
        },
        "desiredlevel": {
          "description": "The desired level of the liquid in percentage.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["currentlevel"]
    },
    "LiquidLevelUpdate" : {
      "properties": {
        "desiredlevel": {
          "description": "The desired level of the liquid in percentage.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["desiredlevel"]
    }
  }
}
```

7.85.5 Property definition

Table 178 defines the Properties that are part of the "oic.r.liquid.level" Resource Type.

Table 178 – The Property definitions of the Resource with type "rt" = "oic.r.liquid.level".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.

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currentlevel	integer	Yes	Read Only	The current level of the liquid in percentage.
desiredlevel	integer	No	Read Write	The desired level of the liquid in percentage.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
desiredlevel	integer	Yes	Read Write	The desired level of the liquid in percentage.

7.85.6 CRUDN behaviour

Table 179 defines the CRUDN operations that are supported on the "oic.r.liquid.level" Resource Type.

Table 179 – The CRUDN operations of the Resource with type "rt" = "oic.r.liquid.level".

Create	Read	Update	Delete	Notify
	get	post		observe

7.86 Vehicle Connector

7.86.1 Introduction

This Resource describes the attributes associated with an electric vehicle charging connector. The Property "connected" is a boolean indicating the status of the connector (False = disconnected, True = connected). The Property "ratedchargingcapacity" and "rateddischargingcapacity" are in Amps (A).

7.86.2 Example URI

/VehicleConnectorResURI

7.86.3 Resource type

The Resource Type is defined as: "oic.r.vehicle.connector".

7.86.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Vehicle Connector",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
```

```
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/VehicleConnectorResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with an electric vehicle
charging connector. The Property \"connected\" is a boolean indicating the status of the connector
(False = disconnected, True = connected). The Property \"ratedchargingcapacity\" and
\"rateddischargingcapacity\" are in Amps (A).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.vehicle.connector"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "connected": true,
                  "ratedchargingcapacity": 20.0,
                  "rateddischargingcapacity": 5.0
                },
              "schema": { "$ref": "#/definitions/VehicleConnector" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "VehicleConnector" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.vehicle.connector"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "connected": {
          "description": "The connection state.",
          "readOnly": true,
          "type": "boolean"
        },
        "ratedchargingcapacity": {
          "description": "The rated charging capacity in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "rateddischargingcapacity": {
          "description": "The rated discharging capacity in Amps (A).",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```

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```
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["connected"]
    }
  }
}
```

7.86.5 Property definition

Table 180 defines the Properties that are part of the "oic.r.vehicle.connector" Resource Type.

Table 180 – The Property definitions of the Resource with type "rt" = "oic.r.vehicle.connector".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
connected	boolean	Yes	Read Only	The connection state.
ratedchargingcapacity	number	No	Read Only	The rated charging capacity in Amps (A).
rateddischargingcapacity	number	No	Read Only	The rated discharging capacity in Amps (A).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.86.6 CRUDN behaviour

Table 181 defines the CRUDN operations that are supported on the "oic.r.vehicle.connector" Resource Type.

Table 181 – The CRUDN operations of the Resource with type "rt" = "oic.r.vehicle.connector".

Create	Read	Update	Delete	Notify
	get			observe

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7.87 Time Stamp

7.87.1 Introduction

This Resource describes Properties associated with a timestamp.
The "timestamp" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g: 2007-04-05T14:30Z) (Time+Date+Timezone).

7.87.2 Example URI

/TimeStampResURI

7.87.3 Resource type

The Resource Type is defined as: "oic.r.time.stamp".

7.87.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Time Stamp",
    "version": "20190327",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TimeStampResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with a timestamp.\nThe
\"timestamp\" Property is a string that captures a timestamp using the RFC3339 datetime format (e.g:
2007-04-05T14:30Z) (Time+Date+Timezone).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.time.stamp"],
                  "if": ["oic.if.s", "oic.if.r", "oic.if.baseline"],
                  "timestamp": "2015-11-05T14:30:00Z"
                },
              "schema": { "$ref": "#/definitions/TimeStamp" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "TimeStamp" : {
      "properties": {
        "rt": {
```

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```
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.time.stamp"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "timestamp": {
          "description": "An RFC3339 formated time indicating when the data was observed (e.g.:
2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00).",
          "format": "date-time",
          "readOnly": true,
          "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["timestamp"]
    }
  }
}
```

7.87.5 Property definition

Table 182 defines the Properties that are part of the "oic.r.time.stamp" Resource Type.

Table 182 – The Property definitions of the Resource with type "rt" = "oic.r.time.stamp".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
timestamp	string	Yes	Read Only	An RFC3339 formated time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00).
n	multiple types: see schema	No	Read Write	

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id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.87.6 CRUDN behaviour

Table 183 defines the CRUDN operations that are supported on the "oic.r.time.stamp" Resource Type.

Table 183 – The CRUDN operations of the Resource with type "rt" = "oic.r.time.stamp".

Create	Read	Update	Delete	Notify
	get			observe

7.88 3D Printer

7.88.1 Introduction

This Resource describes the attributes associated with 3D Printer. The type of 3D printing technology is specified by an enumerated string value. The maximum sizes in mm are included for the x, y, and z dimensions. A designation of whether the device is capable of WAN connectivity is represented in a boolean. The memory capacity is captured in MB.

7.88.2 Example URI

/3DPrinterResURI

7.88.3 Resource type

The Resource Type is defined as: "oic.r.printer.3d".

7.88.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "3D Printer",
    "version": "20190222",
     "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/3DPrinterResURI" : {
      "get": {
        "description": "This Resource describes the attributes associated with 3D Printer. The type
of 3D printing technology is specified by an enumerated string value. The maximum sizes in mm are
included for the x, y, and z dimensions. A designation of whether the device is capable of WAN
connectivity is represented in a boolean. The memory capacity is captured in MB.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt" : ["oic.r.printer.3d"],
```

```
                "if" : ["oic.if.r", "oic.if.baseline"],
                "3dprinttype" : "Digital Light Processing",
                "printsizex" : 300.00,
                "printsizey" : 200.50,
                "printsizez" : 250.75,
                "wanconnected" : false,
                "memorysize" : 120.5
              },
            "schema": { "$ref": "#/definitions/3DPrinter" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "3DPrinter": {
      "properties": {
        "rt": {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.printer.3d"]
          },
          "minItems": 1,
          "uniqueItems" : true,
          "readOnly": true,
          "type": "array"
        },
        "printsizey": {
          "description": "This Property represents the maximum size of printing object in the
direction of Y-axis. The unit is mm.",
          "readOnly": true,
          "type": "number"
        },
        "memorysize": {
          "description": "This Property represents the total memory size of the printer. The unit is
MB(Mega Bytes)",
          "readOnly": true,
          "type": "number"
        },
        "3dprinttype": {
          "description": "The type of 3D printing technology.",
          "enum": [
            "Fused Filament Fabrication",
            "Fused Deposition Modeling",
            "Digital Light Processing",
            "Powder Bed & inkjet head 3D Printing",
            "Photopolymer Jetting Technology",
            "Laminated Object Manufacturing",
            "Stereolithography Apparatus",
            "Selective Laser Sintering",
            "Unknown"
          ],
          "readOnly": true,
          "type": "string"
        },
        "wanconnected": {
          "description": "This Property indicates the connectivity capability of the 3D printer. If
the value is false, the printer does not have network facility to Wide Area Network such as internet
and GSM. If the value is true, the printer has network connectivity",
          "readOnly": true,
          "type": "boolean"
        },
```

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```
        "printsizex": {
          "description": "This Property represents the maximum size of printing object in the
direction of X-axis. The unit is mm.",
          "readOnly": true,
          "type": "number"
        },
        "printsizez": {
          "description": "This Property represents the maximum size of printing object in the
direction of Z-axis. The unit is mm.",
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["3dprinttype", "printsizex", "printsizey", "printsizez", "wanconnected",
"memorysize"]
    }
  }
}
```

7.88.5 Property definition

Table 184 defines the Properties that are part of the "oic.r.printer.3d" Resource Type.

Table 184 – The Property definitions of the Resource with type "rt" = "oic.r.printer.3d".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
printsizey	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of Y-axis. The unit is mm.
memorysize	number	Yes	Read Only	This Property represents the total memory size of the printer. The unit is MB(Mega Bytes)
3dprinttype	string	Yes	Read Only	The type of 3D printing technology.
wanconnected	boolean	Yes	Read Only	This Property indicates the

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				connectivity capability of the 3D printer. If the value is false, the printer does not have network facility to Wide Area Network such as internet and GSM. If the value is true, the printer has network connectivity
printsizex	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of X-axis. The unit is mm.
printsizez	number	Yes	Read Only	This Property represents the maximum size of printing object in the direction of Z-axis. The unit is mm.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.88.6 CRUDN behaviour

Table 185 defines the CRUDN operations that are supported on the "oic.r.printer.3d" Resource Type.

Table 185 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.3d".

Create	Read	Update	Delete	Notify
	get			observe

7.89 Blood Pressure

7.89.1 Introduction

This Resource describes the Properties associated with a person's blood pressure.
The unit is a single value that is one of mmHg or kPa.
If the unit Property is missing the default is a millimeter of mercury [mmHg].
The bloodpressure and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.89.2 Example URI

/BloodPressureResURI

7.89.3 Resource type

The Resource Type is defined as: "oic.r.blood.pressure".

7.89.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure",
```

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```
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BloodPressureResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's blood
pressure.\nThe unit is a single value that is one of mmHg or kPa.\nIf the unit Property is missing
the default is a millimeter of mercury [mmHg].\nThe bloodpressure and unit Properties are read-only
values that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.blood.pressure"
              ],
              "systolic": 110.0,
              "diastolic": 85.0,
              "map": 93.0,
              "range": [20.0, 300.0],
              "step": 1.0,
              "units": "mmHg"
            },
            "schema": {
              "$ref": "#/definitions/BloodPressure"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BloodPressure": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.blood.pressure"
```

```
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "map": {
          "description": "Mean arterial pressure (MAP)",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Blood pressure unit",
          "enum": [
            "mmHg",
            "kPa"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mmHg"
        },
        "systolic": {
          "description": "Systolic blood pressure",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "diastolic": {
          "description": "Diastolic blood pressure",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
```

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```
      },
      "type": "object",
      "required": [
        "systolic",
        "diastolic"
      ]
    }
  }
}
```

7.89.5 Property definition

Table 186 defines the Properties that are part of the "oic.r.blood.pressure" Resource Type.

Table 186 – The Property definitions of the Resource with type "rt" = "oic.r.blood.pressure".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
map	number	No	Read Only	Mean arterial pressure (MAP)
units	string	No	Read Only	Blood pressure unit
systolic	number	Yes	Read Only	Systolic blood pressure
diastolic	number	Yes	Read Only	Diastolic blood pressure
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

7.89.6 CRUDN behaviour

Table 187 defines the CRUDN operations that are supported on the "oic.r.blood.pressure" Resource Type.

Table 187 – The CRUDN operations of the Resource with type "rt" = "oic.r.blood.pressure".

Create	Read	Update	Delete	Notify
	get			observe

7.90 Blood Pressure Monitor Atomic Measurement

7.90.1 Introduction

This Resource describes the Properties associated with a blood pressure monitor.
The Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure), pulse rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).

7.90.2 Example URI

/BloodPressureMonitorAMResURI

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7.90.3 Resource type

The Resource Type is defined as: "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement".

7.90.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Blood Pressure Monitor Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BloodPressureMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse
rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myBloodPressureResURI",
                "rep": {
                  "systolic": 120.0,
                  "diastolic": 80.0,
                  "map": 93.0,
                  "range": [20.0, 300.0],
                  "step": 1,
                  "units": "mmHg"
                }
              },
              {
                "href": "/myPulseRateResURI",
                "rep": {
                  "pulserate": 70,
                  "range": [20, 220],
                  "step": 1
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
```

```
                "timestamp": "2018-11-08T21:00+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/BloodPressureMonitorAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse
rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myBloodPressureResURI",
              "rt": [
                "oic.r.blood.pressure"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myPulseRateResURI",
              "rt": [
                "oic.r.pulserate"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
```

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```
    },
    "/BloodPressureMonitorAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with a blood pressure
monitor.\nThe Resource is an Atomic Measurement of blood pressure (oic.r.blood.pressure),  pulse
rate (oic.r.pulserate), observed time (oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bloodpressuremonitor-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.blood.pressure"
              ],
              "rts": [
                "oic.r.blood.pressure",
                "oic.r.pulserate",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "links": [
                {
                  "href": "/myBloodPressureResURI",
                  "rt": [
                    "oic.r.blood.pressure"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulseRateResURI",
                  "rt": [
                    "oic.r.pulserate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
```

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```
                ]
              }
            ]
          },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BloodPressureResURI.swagger.json#/defini
tions/BloodPressure"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definition
s/PulseRate"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
```

```
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.bloodpressuremonitor-am",
              "oic.wk.atomicmeasurement"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "description": "This contains all possible Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.blood.pressure",
              "oic.r.pulserate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.blood.pressure"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","rts","rts-m","links"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "maxLength": 64,
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        },
        "rt": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "maxLength": 64,
            "enum": [
              "oic.r.blood.pressure",
              "oic.r.pulserate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ]
          }
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


7.90.5 Property definition

Table 188 defines the Properties that are part of the "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 188 – The Property definitions of the Resource with type "rt" = "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	

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rt	array: see schema	Yes	Read Only	
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.90.6 CRUDN behaviour

Table 189 defines the CRUDN operations that are supported on the "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 189 – The CRUDN operations of the Resource with type "rt" = "oic.r.bloodpressuremonitor-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.91 Body Mass Index(BMI)

7.91.1 Introduction

This Resource describes the Properties associated with a person's Body Mass Index (BMI).
The unit, which is the default unit, is kg/m^2.
The bmi and unit Properties are read-only values that are provided by the server.
When range is omitted the default is 0 to +MAXFLOAT.

7.91.2 Example URI

/BMIResURI

7.91.3 Resource type

The Resource Type is defined as: "oic.r.bmi".

7.91.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Mass Index(BMI)",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
```

```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BMIResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's Body Mass
Index (BMI).\nThe unit, which is the default unit, is kg/m^2.\nThe bmi and unit Properties are read-
only values that are provided by the server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bmi"
              ],
              "bmi": 20.0
            },
            "schema": {
              "$ref": "#/definitions/BMI"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BMI": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.bmi"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bmi": {
          "description": "Body Mass Index (BMI) in kg/m^2",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
```

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```
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bmi"
      ]
    }
  }
}
```

7.91.5 Property definition

Table 190 defines the Properties that are part of the "oic.r.bmi" Resource Type.

Table 190 – The Property definitions of the Resource with type "rt" = "oic.r.bmi".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bmi	number	Yes	Read Only	Body Mass Index (BMI) in kg/m^2
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

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n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.91.6 CRUDN behaviour

Table 191 defines the CRUDN operations that are supported on the "oic.r.bmi" Resource Type.

Table 191 – The CRUDN operations of the Resource with type "rt" = "oic.r.bmi".

Create	Read	Update	Delete	Notify
	get			observe

7.92 Body Fat

7.92.1 Introduction

This Resource describes the Properties associated with a person's body fat.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].
The bodyfat and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.92.2 Example URI

/BodyFatResURI

7.92.3 Resource type

The Resource Type is defined as: "oic.r.body.fat".

7.92.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Fat",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyFatResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body
fat.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is missing
the default is kilograms [kg].\nThe bodyfat and unit Properties are read-only values that are
provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
```

```
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.body.fat"
            ],
            "bodyfat": 20.0,
            "units": "kg"
          },
          "schema": {
            "$ref": "#/definitions/BodyFat"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "BodyFat": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.body.fat"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "bodyfat": {
        "description": "Body fat.",
        "minimum": 0.0,
        "readOnly": true,
        "type": "number"
      },
      "units": {
        "description": "Body fat units",
        "enum": [
          "kg",
          "lb",
          "percent"
        ],
        "readOnly": true,
        "type": "string",
        "default": "kg"
      },
      "range": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
```

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```
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bodyfat"
      ]
    }
  }
}
```

7.92.5 Property definition

Table 192 defines the Properties that are part of the "oic.r.body.fat" Resource Type.

Table 192 – The Property definitions of the Resource with type "rt" = "oic.r.body.fat".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bodyfat	number	Yes	Read Only	Body fat.
units	string	No	Read Only	Body fat units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.92.6 CRUDN behaviour

Table 193 defines the CRUDN operations that are supported on the "oic.r.body.fat" Resource Type.

Table 193 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.fat".

Create	Read	Update	Delete	Notify
	get			observe

7.93 Body Fat Free Mass

7.93.1 Introduction

This Resource describes the Properties associated with a person's body fat free mass.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].
The ffm and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.93.2 Example URI

/BodyFatFreeMassResURI

7.93.3 Resource type

The Resource Type is defined as: "oic.r.body.ffm".

7.93.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Fat Free Mass",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyFatFreeMassResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body fat
free mass.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is
missing the default is kilograms [kg].\nThe ffm and unit Properties are read-only values that are
provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
```

```
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.ffm"
              ],
              "ffm": 40.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodyFatFreeMass"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyFatFreeMass": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.ffm"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ffm": {
          "description": "Body fat free mass.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body fat free mass units",
          "enum": [
            "kg",
            "lb",
            "percent"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
```

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```
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "ffm"
      ]
    }
  }
}
```

7.93.5 Property definition

Table 194 defines the Properties that are part of the "oic.r.body.ffm" Resource Type.

Table 194 – The Property definitions of the Resource with type "rt" = "oic.r.body.ffm".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
ffm	number	Yes	Read Only	Body fat free mass.
units	string	No	Read Only	Body fat free mass units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

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7.93.6 CRUDN behaviour

Table 195 defines the CRUDN operations that are supported on the "oic.r.body.ffm" Resource Type.

Table 195 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.ffm".

Create	Read	Update	Delete	Notify
	get			observe

7.94 Body Location Temperature

7.94.1 Introduction

This Resource describes the Properties associated with body location for temperature measurement of a person.
The bloc Property is a read-only value that is provided by the Server.

7.94.2 Example URI

/BodyLocationTemperatureResURI

7.94.3 Resource type

The Resource Type is defined as: "oic.r.body.location.temperature".

7.94.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Location Temperature",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyLocationTemperatureResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with body location for
temperature measurement of a person.\nThe bloc Property is a read-only value that is provided by the
Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.location.temperature"
              ],
              "bloc": "ear"
            },
```

```
            "schema": {
              "$ref": "#/definitions/BodyLocationTemperature"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyLocationTemperature": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.location.temperature"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bloc": {
          "description": "A list specific to temperature site",
          "enum": [
            "axillary",
            "body",
            "ear",
            "finger",
            "gitract",
            "mouth",
            "rectum",
            "toe",
            "tympanum"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
```

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```
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "bloc"
      ]
    }
  }
}
```

7.94.5 Property definition

Table 196 defines the Properties that are part of the "oic.r.body.location.temperature" Resource Type.

Table 196 – The Property definitions of the Resource with type "rt" = "oic.r.body.location.temperature".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bloc	string	Yes	Read Only	A list specific to temperature site
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.94.6 CRUDN behaviour

Table 197 defines the CRUDN operations that are supported on the "oic.r.body.location.temperature" Resource Type.

Table 197 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.location.temperature".

Create	Read	Update	Delete	Notify
	get			observe

7.95 Body Scale Atomic Measurement

7.95.1 Introduction

This Resource describes the Properties associated with body scale.
The Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).

7.95.2 Example URI

/BodyScaleAMResURI

7.95.3 Resource type

The Resource Type is defined as: "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

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7.95.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Scale Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyScaleAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\nThe
Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi),
height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass
(oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id
(oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
                "rep": {
                  "weight": 80.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBMI",
                "rep": {
                  "bmi": 20.0
                }
              },
              {
                "href": "/myHeight",
                "rep": {
                  "height": 1.8,
                  "units": "m"
                }
              },
              {
                "href": "/myBodyFat",
                "rep": {
                  "bodyfat": 20.0,
                  "units": "kg"
                }
              },
              {
                "href": "/myBodyWater",
                "rep": {
```

```
                "bwater": 20.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBodySoftLeanMass",
              "rep": {
                "slm": 20.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBodyFatFreeMass",
              "rep": {
                "ffm": 40.0,
                "units": "kg"
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    },
    "/BodyScaleAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\nThe
Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi),
height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass
(oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id
(oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
                "rt": [
                  "oic.r.weight"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBMI",
                "rt": [
                  "oic.r.bmi"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
```

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```
    ]
  },
  {
    "href": "/myHeight",
    "rt": [
      "oic.r.height"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyFat",
    "rt": [
      "oic.r.body.fat"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyWater",
    "rt": [
      "oic.r.body.water"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodySoftLeanMass",
    "rt": [
      "oic.r.body.slm"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyFatFreeMass",
    "rt": [
      "oic.r.body.ffm"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myUserId",
    "rt": [
      "oic.r.userid"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myTimeStamp",
    "rt": [
      "oic.r.time.stamp"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  }
```

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```
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/BodyScaleAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with body scale.\nThe
Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi),
height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass
(oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id
(oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bodyscale-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts": [
                "oic.r.weight",
                "oic.r.bmi",
                "oic.r.height",
                "oic.r.body.fat",
                "oic.r.body.water",
                "oic.r.body.slm",
                "oic.r.body.ffm",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "rts-m": [
                "oic.r.weight"
              ],
              "links": [
                {
                  "href": "/myWeight",
                  "rt": [
                    "oic.r.weight"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myBMI",
                  "rt": [
                    "oic.r.bmi"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myHeight",
                  "rt": [
                    "oic.r.height"
```

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```
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myBodyFat",
        "rt": [
          "oic.r.body.fat"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myBodyWater",
        "rt": [
          "oic.r.body.water"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myBodySoftLeanMass",
        "rt": [
          "oic.r.body.slm"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myBodyFatFreeMass",
        "rt": [
          "oic.r.body.ffm"
        ],
        "if": [
          "oic.if.s",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myUserId",
        "rt": [
          "oic.r.userid"
        ],
        "if": [
          "oic.if.r",
          "oic.if.baseline"
        ]
      },
      {
        "href": "/myTimeStamp",
        "rt": [
          "oic.r.time.stamp"
        ],
        "if": [
          "oic.if.r",
          "oic.if.baseline"
        ]
      }
    ]
  },
  "schema": {
    "$ref": "#/definitions/baseline"
  }
}
```

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```
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bodyscale-am",
            "oic.wk.atomicmeasurement"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts": {
        "description": "This contains all possible Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.weight",
            "oic.r.bmi",
            "oic.r.height",
            "oic.r.body.fat",
            "oic.r.body.water",
            "oic.r.body.slm",
            "oic.r.body.ffm",
            "oic.r.time.stamp",
            "oic.r.userid"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts-m": {
        "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
        "items": {
          "enum": [
            "oic.r.weight"
          ],
          "type": "string",
          "maxLength": 64
        },
        "maxItems": 1,
        "minItems": 1,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/WeightResURI.swagger.json#/definitions/W
eight"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BMIResURI.swagger.json#/definitions/BMI"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeightResURI.swagger.json#/definitions/H
eight"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatResURI.swagger.json#/definitions/
BodyFat"
              },
              {
                "$ref":
```

```
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyWaterResURI.swagger.json#/definition
s/BodyWater"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodySoftLeanMassResURI.swagger.json#/def
initions/BodySoftLeanMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatFreeMassResURI.swagger.json#/defi
nitions/BodyFatFreeMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "properties": {
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.weight",
              "oic.r.bmi",
              "oic.r.height",
              "oic.r.body.fat",
              "oic.r.body.water",
              "oic.r.body.slm",
              "oic.r.body.ffm",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
```


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```
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.95.5 Property definition

Table 198 defines the Properties that are part of the "oic.r.bodyscale-am, oic.wk.atomicmeasurement" Resource Type.

Table 198 – The Property definitions of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read Only	

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rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
if	array: see schema	Yes	Read Only	The OCF Interface set supported by the target Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.95.6 CRUDN behaviour

Table 199 defines the CRUDN operations that are supported on the "oic.r.bodyscale-am, oic.wk.atomicmeasurement" Resource Type.

Table 199 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodyscale-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

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7.96 Body Soft Lean Mass

7.96.1 Introduction

This Resource describes the Properties associated with a person's body soft lean mass.
The unit is a single value that is one of kg, lb or percent.
If the unit Property is missing the default is kilograms [kg].
The slm and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.96.2 Example URI

/BodySoftLeanMassResURI

7.96.3 Resource type

The Resource Type is defined as: "oic.r.body.slm".

7.96.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Soft Lean Mass",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodySoftLeanMassResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body soft
lean mass.\nThe unit is a single value that is one of kg, lb or percent.\nIf the unit Property is
missing the default is kilograms [kg].\nThe slm and unit Properties are read-only values that are
provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.slm"
              ],
              "slm": 20.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodySoftLeanMass"
            }
          }
        }
      }
```

```
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodySoftLeanMass": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.slm"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "slm": {
          "description": "Body soft lean mass.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body soft lean mass units",
          "enum": [
            "kg",
            "lb",
            "percent"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
```

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```
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "slm"
      ]
    }
  }
}
```

7.96.5 Property definition

Table 200 defines the Properties that are part of the "oic.r.body.slm" Resource Type.

Table 200 – The Property definitions of the Resource with type "rt" = "oic.r.body.slm".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
slm	number	Yes	Read Only	Body soft lean mass.
units	string	No	Read Only	Body soft lean mass units
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.96.6 CRUDN behaviour

Table 201 defines the CRUDN operations that are supported on the "oic.r.body.slm" Resource Type.

Table 201 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.slm".

Create	Read	Update	Delete	Notify
	get			observe

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7.97 Body Thermometer Atomic Measurement

7.97.1 Introduction

This Resource describes the Properties associated with body thermometer.
The Resource is an Atomic Measurement of temperature (oic.r.temperature), body location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and user id (oic.r.userid).

7.97.2 Example URI

/BodyThermometerAMResURI

7.97.3 Resource type

The Resource Type is defined as: "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

7.97.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Thermometer Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyThermometerAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with body
thermometer.\nThe Resource is an Atomic Measurement of temperature (oic.r.temperature), body
location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and
user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myTemperature",
                "rep": {
                  "temperature": 38.0,
                  "units": "C"
                }
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rep": {
                  "bloc": "mouth"
                }
              },
```

```
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/BodyThermometerAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with body
thermometer.\nThe Resource is an Atomic Measurement of temperature (oic.r.temperature), body
location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and
user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myTemperature",
                "rt": [
                  "oic.r.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rt": [
                  "oic.r.body.location.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
```

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```
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/BodyThermometerAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with body
thermometer.\nThe Resource is an Atomic Measurement of temperature (oic.r.temperature), body
location for temperature (oic.r.body.location.temperature), observed time (oic.r.time.stamp), and
user id (oic.r.userid).",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.bodythermometer-am",
              "oic.wk.atomicmeasurement"
            ],
            "if": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "rts": [
              "oic.r.temperature",
              "oic.r.body.location.temperature",
              "oic.r.userid",
              "oic.r.time.stamp"
            ],
            "rts-m": [
              "oic.r.temperature"
            ],
            "links": [
              {
                "href": "/myTemperature",
                "rt": [
                  "oic.r.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyLocationForTemperature",
                "rt": [
                  "oic.r.body.location.temperature"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
```

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```
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TemperatureResURI.swagger.json#/definiti
ons/Temperature"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyLocationTemperatureResURI.swagger.js
on#/definitions/BodyLocationTemperature"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
```

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```
      "href",
      "rep"
    ],
    "type": "object"
  },
  "type": "array"
},
"links": {
  "type": "array",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},
"baseline": {
  "properties": {
    "rt": {
      "items": {
        "enum": [
          "oic.r.bodythermometer-am",
          "oic.wk.atomicmeasurement"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 2,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "rts": {
      "description": "This contains all possible Resource Types for this Atomic Measurement.",
      "items": {
        "enum": [
          "oic.r.temperature",
          "oic.r.body.location.temperature",
          "oic.r.time.stamp",
          "oic.r.userid"
        ],
        "type": "string",
        "maxLength": 64
      },
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "rts-m": {
      "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
      "items": {
        "enum": [
          "oic.r.temperature"
        ],
        "type": "string",
        "maxLength": 64
      },
      "maxItems": 1,
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "type": "array"
    },
    "if": {
      "description": "The OC Interface set supported by this Resource",
      "items": {
        "enum": [
          "oic.if.b",
          "oic.if.ll",
          "oic.if.baseline"
        ],
        "type": "string",
        "maxLength": 64
      },
```

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```
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by target Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.temperature",
              "oic.r.body.location.temperature",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
```

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```
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.97.5 Property definition

Table 202 defines the Properties that are part of the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

Table 202 – The Property definitions of the Resource with type "rt" = "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.

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if	array: see schema	Yes	Read Only	The OC Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.97.6 CRUDN behaviour

Table 203 defines the CRUDN operations that are supported on the "oic.r.bodythermometer-am, oic.wk.atomicmeasurement" Resource Type.

Table 203 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodythermometer-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.98 Body Water

7.98.1 Introduction

This Resource describes the Properties associated with a person's body water.
The unit is a single value that is one of kg or lb.
If the unit Property is missing the default is kilograms [kg].
The bwater and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.98.2 Example URI

/BodyWaterResURI

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7.98.3 Resource type

The Resource Type is defined as: "oic.r.body.water".

7.98.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Water",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyWaterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's body
water.\nThe unit is a single value that is one of kg or lb.\nIf the unit Property is missing the
default is kilograms [kg].\nThe bwater and unit Properties are read-only values that are provided by
the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.body.water"
              ],
              "bwater": 20.0,
              "units": "kg"
            },
            "schema": {
              "$ref": "#/definitions/BodyWater"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "BodyWater": {
```

```
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.body.water"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bwater": {
          "description": "Body water.",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Body water unit",
          "enum": [
            "kg",
            "lb"
          ],
          "readOnly": true,
          "type": "string",
          "default": "kg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
```

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```
      "type": "object",
      "required": [
        "bwater"
      ]
    }
  }
}
```

7.98.5 Property definition

Table 204 defines the Properties that are part of the "oic.r.body.water" Resource Type.

Table 204 – The Property definitions of the Resource with type "rt" = "oic.r.body.water".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
bwater	number	Yes	Read Only	Body water.
units	string	No	Read Only	Body water unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.98.6 CRUDN behaviour

Table 205 defines the CRUDN operations that are supported on the "oic.r.body.water" Resource Type.

Table 205 – The CRUDN operations of the Resource with type "rt" = "oic.r.body.water".

Create	Read	Update	Delete	Notify
	get			observe

7.99 Glucose

7.99.1 Introduction

This Resource describes the Properties associated with a person's glucose level.
The unit is a single value that is one of mg/dL, mmol/L.
If the unit Property is missing the default is milligrams per decilitre [mg/dL].
The glucose and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.99.2 Example URI

/GlucoseResURI

7.99.3 Resource type

The Resource Type is defined as: "oic.r.glucose".

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7.99.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Glucose",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's glucose
level.\nThe unit is a single value that is one of mg/dL, mmol/L.\nIf the unit Property is missing
the default is milligrams per decilitre [mg/dL].\nThe glucose and unit Properties are read-only
values that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose"
              ],
              "glucose": 90.0,
              "units": "mg/dL",
              "range": [
                20.0,
                600.0
              ],
              "step": 1
            },
            "schema": {
              "$ref": "#/definitions/Glucose"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
```

```
    "Glucose": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "glucose": {
          "description": "A measurement of glucose concentration in the blood",
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Glucose unit",
          "enum": [
            "mg/dL",
            "mmol/L"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mg/dL"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": [
        "glucose"
      ]
    }
  }
}
```

7.99.5 Property definition

Table 206 defines the Properties that are part of the "oic.r.glucose" Resource Type.

Table 206 – The Property definitions of the Resource with type "rt" = "oic.r.glucose".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
glucose	number	Yes	Read Only	A measurement of glucose concentration in the blood
units	string	No	Read Only	Glucose unit
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.99.6 CRUDN behaviour

Table 207 defines the CRUDN operations that are supported on the "oic.r.glucose" Resource Type.

Table 207 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose".

Create	Read	Update	Delete	Notify
	get			observe

7.100 Context Carbohydrates for Glucose Meter

7.100.1 Introduction

This Resource describes the Properties associated with a context carbohydrates.
The carb Property has a default unit of grams[g].
The carb and meal Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.100.2 Example URI

/GlucoseCarbResURI

7.100.3 Resource type

The Resource Type is defined as: "oic.r.glucose.carb".

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7.100.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Carbohydrates for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseCarbResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a context
carbohydrates.\nThe carb Property has a default unit of grams[g].\nThe carb and meal Properties are
read-only values that are provided by the Server.\nWhen range is omitted the default is 0 to
+MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.carb"
              ],
              "carb": 100.0,
              "meal": "breakfast"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseCarb"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseCarb": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
```

```
            "enum": [
              "oic.r.glucose.carb"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "carb": {
          "description": "The amount of carbohydrates undertaken in grams",
          "readOnly": true,
          "type": "number",
          "minimum": 0.0
        },
        "meal": {
          "description": "Recorded time of carbohydrates intake",
          "enum": [
            "breakfast",
            "lunch",
            "dinner",
            "snack",
            "drink",
            "supper",
            "brunch",
            "undetermined",
            "other",
            "no_entry",
            "no_ingestion"
          ],
          "readOnly": true,
          "type": "string"
        },
        "range": {
          "description": "The range applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "description": "The step applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "description": "The precision applies to the carb property only",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
```

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```
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "carb",
        "meal"
      ]
    }
  }
}
```

7.100.5 Property definition

Table 208 defines the Properties that are part of the "oic.r.glucose.carb" Resource Type.

Table 208 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.carb".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
carb	number	Yes	Read Only	The amount of carbohydrates undertaken in grams
meal	string	Yes	Read Only	Recorded time of carbohydrates intake
range	multiple types: see schema	No	Read Write	The range applies to the carb property only
step	multiple types: see schema	No	Read Write	The step applies to the carb property only
precision	multiple types: see schema	No	Read Write	The precision applies to the carb property only
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.100.6 CRUDN behaviour

Table 209 defines the CRUDN operations that are supported on the "oic.r.glucose.carb" Resource Type.

Table 209 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.carb".

Create	Read	Update	Delete	Notify
	get			observe

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7.101 Exercise for Glucose Meter

7.101.1 Introduction

This Resource describes the Properties associated with glucose exercise.
The exercise Property has a default unit of percentage.
The exercise Property is a read-only value that is provided by the Server.

7.101.2 Example URI

/ExerciseResURI

7.101.3 Resource type

The Resource Type is defined as: "oic.r.glucose.exercise".

7.101.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Exercise for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ExerciseResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with glucose
exercise.\nThe exercise Property has a default unit of percentage.\nThe exercise Property is a read-
only value that is provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.exercise"
              ],
              "exercise": 30.0
            },
            "schema": {
              "$ref": "#/definitions/Exercise"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
```

```
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Exercise": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.exercise"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "exercise": {
          "description": "The level of exercise undertaken in percentage",
          "maximum": 100.0,
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": [
        "exercise"
      ]
    }
  }
}
```

7.101.5 Property definition

Table 210 defines the Properties that are part of the "oic.r.glucose.exercise" Resource Type.

Table 210 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.exercise".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
exercise	number	Yes	Read Only	The level of exercise undertaken in percentage
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.101.6 CRUDN behaviour

Table 211 defines the CRUDN operations that are supported on the "oic.r.glucose.exercise" Resource Type.

Table 211 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.exercise".

Create	Read	Update	Delete	Notify
	get			observe

7.102 Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter

7.102.1 Introduction

This Resource describes the Properties associated with a person's hba1c level.
The unit is a single value that is percentage.
The hba1c Property is a read-only value that is provided by the Server.

7.102.2 Example URI

/GlucoseHbA1cResURI

7.102.3 Resource type

The Resource Type is defined as: "oic.r.glucose.hba1c".

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7.102.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Hemoglobin Bound to Glucose A1c Form (HbA1c) for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseHbA1cResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's hba1c
level.\nThe unit is a single value that is percentage.\nThe hba1c Property is a read-only value that
is provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.hba1c"
              ],
              "hba1c": 5.0
            },
            "schema": {
              "$ref": "#/definitions/HbA1c"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "HbA1c": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.hba1c"
```

```
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "hba1c": {
          "description": "Current HbA1c measurement in percentage",
          "maximum": 100.0,
          "minimum": 0.0,
          "readOnly": true,
          "type": "number"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "hba1c"
      ]
    }
  }
}
```

7.102.5 Property definition

Table 212 defines the Properties that are part of the "oic.r.glucose.hba1c" Resource Type.

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Table 212 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.hba1c".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
hba1c	number	Yes	Read Only	Current HbA1c measurement in percentage
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.102.6 CRUDN behaviour

Table 213 defines the CRUDN operations that are supported on the "oic.r.glucose.hba1c" Resource Type.

Table 213 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.hba1c".

Create	Read	Update	Delete	Notify
	get			observe

7.103 Context Health for Glucose Meter

7.103.1 Introduction

This Resource describes the Properties associated with context health.
The health Property is a read-only value that is provided by the Server where
minor and major are related to the general health or the level of illness of the person;
menses refers to the female menstrual cycle;
stress refers to physiological or psychological stress.

7.103.2 Example URI

/GlucoseHealthResURI

7.103.3 Resource type

The Resource Type is defined as: "oic.r.glucose.health".

7.103.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Health for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
```

```
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseHealthResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context health.\nThe
health Property is a read-only value that is provided by the Server where\nminor and major are
related to the general health or the level of illness of the person;\nmenses refers to the female
menstrual cycle;\nstress refers to physiological or psychological stress.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.health"
              ],
              "health": "major"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseHealth"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseHealth": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.health"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "health": {
          "description": "The various levels of health a person feels when taking a glucose.",
          "enum": [
            "minor",
```

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```
            "major",
            "menses",
            "stress",
            "none"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "health"
      ]
    }
  }
}
```

7.103.5 Property definition

Table 214 defines the Properties that are part of the "oic.r.glucose.health" Resource Type.

Table 214 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.health".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
health	string	Yes	Read Only	The various levels of health a person feels when taking a glucose.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

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7.103.6 CRUDN behaviour

Table 215 defines the CRUDN operations that are supported on the "oic.r.glucose.health" Resource Type.

Table 215 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.health".

Create	Read	Update	Delete	Notify
	get			observe

7.104 Context Meal for Glucose Meter

7.104.1 Introduction

This Resource describes the Properties associated with context meal.
Preprandial means pre-meal.
Postprandial means post-meal.
Fasting means the effect of long-term absence of food intake (overnight).
The meal Property is a read-only value that is provided by the Server.

7.104.2 Example URI

/GlucoseMealResURI

7.104.3 Resource type

The Resource Type is defined as: "oic.r.glucose.meal".

7.104.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Meal for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseMealResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context
meal.\nPreprandial means pre-meal.\nPostprandial means post-meal.\nFasting means the effect of long-
term absence of food intake (overnight).\nThe meal Property is a read-only value that is provided by
the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
```

```
              "rt": [
                "oic.r.glucose.meal"
              ],
              "meal": "preprandial"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseMeal"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseMeal": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.meal"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "meal": {
          "description": "Time of day when the measurement is taken.",
          "enum": [
            "preprandial",
            "postprandial",
            "fasting",
            "bedtime",
            "casual"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
```

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```
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "meal"
      ]
    }
  }
}
```

7.104.5 Property definition

Table 216 defines the Properties that are part of the "oic.r.glucose.meal" Resource Type.

Table 216 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.meal".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
meal	string	Yes	Read Only	Time of day when the measurement is taken.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.104.6 CRUDN behaviour

Table 217 defines the CRUDN operations that are supported on the "oic.r.glucose.meal" Resource Type.

Table 217 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.meal".

Create	Read	Update	Delete	Notify
	get			observe

7.105 Context Medication for Glucose Meter

7.105.1 Introduction

This Resource describes the Properties associated with context medication.
The unit is a single value that is one of mg and mL.
The medication Property has a default unit of milligrams[mg].
The medication, unit and regimen Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.105.2 Example URI

/GlucoseMedicationResURI

7.105.3 Resource type

The Resource Type is defined as: "oic.r.glucose.medication".

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7.105.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Medication for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseMedicationResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context
medication.\nThe unit is a single value that is one of mg and mL.\nThe medication Property has a
default unit of milligrams[mg].\nThe medication, unit and regimen Properties are read-only values
that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.medication"
              ],
              "medication": 100.0,
              "units": "mg",
              "regimen": "rapidacting"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseMedication"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseMedication": {
      "properties": {
        "rt": {
          "description": "Resource Type",
```

```
          "items": {
            "enum": [
              "oic.r.glucose.medication"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "regimen": {
          "description": "Medication regimen",
          "enum": [
            "rapidacting",
            "shortacting",
            "intermediateacting",
            "longacting",
            "premix"
          ],
          "readOnly": true,
          "type": "string"
        },
        "medication": {
          "description": "The amount of medication taken",
          "readOnly": true,
          "type": "number",
          "minimum": 0.0
        },
        "units": {
          "description": "Unit for the amount of medication taken",
          "enum": [
            "mg",
            "mL"
          ],
          "readOnly": true,
          "type": "string",
          "default": "mg"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
```

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```
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "medication"
      ]
    }
  }
}
```

7.105.5 Property definition

Table 218 defines the Properties that are part of the "oic.r.glucose.medication" Resource Type.

Table 218 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.medication".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
regimen	string	No	Read Only	Medication regimen
medication	number	Yes	Read Only	The amount of medication taken
units	string	No	Read Only	Unit for the amount of medication taken
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.105.6 CRUDN behaviour

Table 219 defines the CRUDN operations that are supported on the "oic.r.glucose.medication" Resource Type.

Table 219 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.medication".

Create	Read	Update	Delete	Notify
	get			observe

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7.106 Glucose Meter Atomic Measurement

7.106.1 Introduction

This Resource describes the Properties associated with glucose meter.
The Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates (oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal (oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location (oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time (oic.r.time.stamp), and user id (oic.r.userid).

7.106.2 Example URI

/GlucoseMeterAMResURI

7.106.3 Resource type

The Resource Type is defined as: "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

7.106.4 OpenAPI 2.0 definition


```
{
  "swagger": "2.0",
  "info": {
    "title": "Glucose Meter Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseMeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with glucose meter.\nThe
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates
(oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), hemoglobin bound to glucose a1c
Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rep": {
                  "glucose": 100.0,
                  "units": "mg/dL",
                  "range": [
```


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```
        20.0,
        600.0
      ],
      "step": 1
    }
  },
  {
    "href": "/myGlucoseCarb",
    "rep": {
      "carb": 100.0,
      "meal": "breakfast"
    }
  },
  {
    "href": "/myGlucoseExercise",
    "rep": {
      "exercise": 30.0
    }
  },
  {
    "href": "/myGlucoseHbA1c",
    "rep": {
      "hba1c": 5.0
    }
  },
  {
    "href": "/myGlucoseHealth",
    "rep": {
      "health": "major"
    }
  },
  {
    "href": "/myGlucoseMeal",
    "rep": {
      "meal": "preprandial"
    }
  },
  {
    "href": "/myGlucoseMeditation",
    "rep": {
      "medication": 100.0,
      "units": "mg",
      "regimen": "rapidacting"
    }
  },
  {
    "href": "/myGlucoseSampleLocation",
    "rep": {
      "samplelocation": "finger"
    }
  },
  {
    "href": "/myGlucoseTester",
    "rep": {
      "tester": "self"
    }
  },
  {
    "href": "/myUserId",
    "rep": {
      "userid": "USER1"
    }
  },
  {
    "href": "/myTimeStamp",
    "rep": {
      "timestamp": "2018-11-09T12:15+08:00"
    }
  }
],
"schema": {
  "$ref": "#/definitions/batch-retrieve"
```


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```
            }
          }
        }
      }
    },
    "/GlucoseMeterAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with glucose meter.\nThe
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates
(oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), hemoglobin bound to glucose a1c
Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rt": [
                  "oic.r.glucose"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myGlucoseCarb",
                "rt": [
                  "oic.r.glucose.carb"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myGlucoseExercise",
                "rt": [
                  "oic.r.glucose.exercise"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myGlucoseHbA1c",
                "rt": [
                  "oic.r.glucose.hba1c"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myGlucoseHealth",
                "rt": [
                  "oic.r.glucose.health"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
```

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```
          },
          {
            "href": "/myGlucoseMeal",
            "rt": [
              "oic.r.glucose.meal"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myGlucoseMedication",
            "rt": [
              "oic.r.glucose.medication"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myGlucoseSampleLocation",
            "rt": [
              "oic.r.glucose.samplelocation"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myGlucoseTester",
            "rt": [
              "oic.r.glucose.tester"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myUserId",
            "rt": [
              "oic.r.userid"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          },
          {
            "href": "/myTimeStamp",
            "rt": [
              "oic.r.time.stamp"
            ],
            "if": [
              "oic.if.r",
              "oic.if.baseline"
            ]
          }
        ],
        "schema": {
          "$ref": "#/definitions/links"
        }
      }
    }
  }
},
"/GlucoseMeterAMResURI?if=oic.if.baseline": {
  "get": {
    "description": "This Resource describes the Properties associated with glucose meter.\nThe
```

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```
Resource is an Atomic Measurement of glucose (oic.r.glucose), context carbohydrates
(oic.r.glucose.carb), context exercise (oic.r.glucose.exercise), Hemoglobin Bound to glucose a1c
Form (HbA1c) (oic.r.glucose.hba1c), context health (oic.r.glucose.health), context meal
(oic.r.glucose.meal), context medication (oic.r.glucose.medication), context sample location
(oic.r.glucose.samplelocation), context tester (oic.r.glucose.tester), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucosemeter-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts": [
                "oic.r.glucose",
                "oic.r.glucose.carb",
                "oic.r.glucose.exercise",
                "oic.r.glucose.hba1c",
                "oic.r.glucose.health",
                "oic.r.glucose.meal",
                "oic.r.glucose.medication",
                "oic.r.glucose.samplelocation",
                "oic.r.glucose.tester",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "rts-m": [
                "oic.r.glucose"
              ],
              "links": [
                {
                  "href": "/myGlucose",
                  "rt": [
                    "oic.r.glucose"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myGlucoseCarb",
                  "rt": [
                    "oic.r.glucose.carb"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myGlucoseExercise",
                  "rt": [
                    "oic.r.glucose.exercise"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
```

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```
    "href": "/myGlucoseHbA1c",
    "rt": [
      "oic.r.glucose.hba1c"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myGlucoseHealth",
    "rt": [
      "oic.r.glucose.health"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myGlucoseMeal",
    "rt": [
      "oic.r.glucose.meal"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myGlucoseMedication",
    "rt": [
      "oic.r.glucose.medication"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myGlucoseSampleLocation",
    "rt": [
      "oic.r.glucose.samplelocation"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myGlucoseTester",
    "rt": [
      "oic.r.glucose.tester"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myUserId",
    "rt": [
      "oic.r.userid"
    ],
    "if": [
      "oic.if.r",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myTimeStamp",
    "rt": [
```


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```
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ]
          },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "batch-retrieve": {
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/
Glucose"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseCarbResURI.swagger.json#/definiti
ons/GlucoseCarb"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ExerciseResURI.swagger.json#/definitions
/Exercise"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHbA1cResURI.swagger.json#/definit
ions/HbA1c"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseHealthResURI.swagger.json#/defini
tions/GlucoseHealth"
```

```
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseMealResURI.swagger.json#/definiti
ons/GlucoseMeal"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseMedicationResURI.swagger.json#/de
finitions/GlucoseMedication"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseSampleLocationResURI.swagger.json
#/definitions/GlucoseSampleLocation"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseTesterResURI.swagger.json#/defini
tions/GlucoseTester"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.glucosemeter-am",
              "oic.wk.atomicmeasurement"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts": {
          "description": "This contains all possible Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.glucose.carb",
              "oic.r.glucose.exercise",
              "oic.r.glucose.hba1c",
              "oic.r.glucose.health",
              "oic.r.glucose.meal",
              "oic.r.glucose.medication",
              "oic.r.glucose.samplelocation",
              "oic.r.glucose.tester",
              "oic.r.time.stamp",
```

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```
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 1,
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
```

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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.glucose.carb",
              "oic.r.glucose.exercise",
              "oic.r.glucose.hba1c",
              "oic.r.glucose.health",
              "oic.r.glucose.meal",
              "oic.r.glucose.medication",
              "oic.r.glucose.samplelocation",
              "oic.r.glucose.tester",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.106.5 Property definition

Table 220 defines the Properties that are part of the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 220 – The Property definitions of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by the target Resource
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	

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ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.106.6 CRUDN behaviour

Table 221 defines the CRUDN operations that are supported on the "oic.r.glucosemeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 221 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucosemeter-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.107 Context Sample Location for Glucose Meter

7.107.1 Introduction

This Resource describes the Properties associated with context sample Location.
AST means Alternative Site Test specifying that the location of test performed was from an alternative site on the body.
The samplelocation Property is a read-only value that is provided by the Server.

7.107.2 Example URI

/GlucoseSampleLocationResURI

7.107.3 Resource type

The Resource Type is defined as: "oic.r.glucose.samplelocation".

7.107.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Sample Location for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseSampleLocationResURI": {
```

```
      "get": {
        "description": "This Resource describes the Properties associated with context sample
Location.\nAST means Alternative Site Test specifying that the location of test performed was from
an alternative site on the body.\nThe samplelocation Property is a read-only value that is provided
by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.samplelocation"
              ],
              "samplelocation": "finger"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseSampleLocation"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseSampleLocation": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.samplelocation"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "samplelocation": {
          "description": "The possible blood locations where the blood sample may be taken.",
          "enum": [
            "finger",
            "ast",
            "earlobe",
            "ctrlsolution"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
```

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```
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "samplelocation"
      ]
    }
  }
}
```

7.107.5 Property definition

Table 222 defines the Properties that are part of the "oic.r.glucose.samplelocation" Resource Type.

Table 222 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.samplelocation".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
samplelocation	string	Yes	Read Only	The possible blood locations where the blood sample may be taken.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.107.6 CRUDN behaviour

Table 223 defines the CRUDN operations that are supported on the "oic.r.glucose.samplelocation" Resource Type.

Table 223 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.samplelocation".

Create	Read	Update	Delete	Notify
	get			observe

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7.108 Context Tester for Glucose Meter

7.108.1 Introduction

This Resource describes the Properties associated with context tester.
The tester Property is a read-only value that is provided by the Server where especially hcp stands for HealthCare Professional.

7.108.2 Example URI

/GlucoseTesterResURI

7.108.3 Resource type

The Resource Type is defined as: "oic.r.glucose.tester".

7.108.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Context Tester for Glucose Meter",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/GlucoseTesterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with context tester.\nThe
tester Property is a read-only value that is provided by the Server where especially\nhcp stands for
HealthCare Professional.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.glucose.tester"
              ],
              "tester": "self"
            },
            "schema": {
              "$ref": "#/definitions/GlucoseTester"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
```

```
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "GlucoseTester": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.glucose.tester"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tester": {
          "description": "The possible cases of testers who may perform the blood sugar
measurement.",
          "enum": [
            "self",
            "hcp",
            "lab"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "tester"
      ]
    }
  }
}
```

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7.108.5 Property definition

Table 224 defines the Properties that are part of the "oic.r.glucose.tester" Resource Type.

Table 224 – The Property definitions of the Resource with type "rt" = "oic.r.glucose.tester".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
tester	string	Yes	Read Only	The possible cases of testers who may perform the blood sugar measurement.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.108.6 CRUDN behaviour

Table 225 defines the CRUDN operations that are supported on the "oic.r.glucose.tester" Resource Type.

Table 225 – The CRUDN operations of the Resource with type "rt" = "oic.r.glucose.tester".

Create	Read	Update	Delete	Notify
	get			observe

7.109 Optical RFID Station

7.109.1 Introduction

The Property "process" represents the stage of the product in the product line which has an optical RFID tag on its body.
The Property "event" is represented by a Boolean value set to "true" and "false" alarming the issue when additional action is requested for the tagged product.
The Property "actionrequest" represent necessary actions like the isolation of the product, to send the product back to other specific line to modify or fix the issue.

7.109.2 Example URI

/ORFIDStationResURI

7.109.3 Resource type

The Resource Type is defined as: "oic.r.orfid.station".

7.109.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Station",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
```

```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDStationResURI" : {
      "get": {
        "description": "The Property \"process\" represents the stage of the product in the product
line which has an optical RFID tag on its body.\nThe Property \"event\" is represented by a Boolean
value set to \"true\" and \"false\" alarming the issue when additional action is requested for the
tagged product.\nThe Property \"actionrequest\" represent necessary actions like the isolation of
the product, to send the product back to other specific line to modify or fix the issue.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the station information from optical augmented RFID reader
in smart factory environment.",
              "x-example":
                {
                  "rt": ["oic.r.orfid.station"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "process": 17,
                  "event": true,
                  "actionrequest": 2
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      },
      "post": {
        "description": "Sets necessary action in accordance with Tag Information.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ORFID" },
            "x-example":
              {
                "event": false,
                "actionrequest": 0
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "event": false,
                  "actionrequest": 0
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ORFID" : {
```

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```
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.orfid.station"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "process": {
          "description": "The process step that is being performed at this station.",
          "readOnly": true,
          "type": "integer"
        },
        "actionrequest": {
          "description": "The action request identifier.",
          "type": "integer"
        },
        "event": {
          "description": "The Event indicator, when True, the action request should be applied to
the product identified by the tagid.",
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["event", "actionrequest"]
    }
  }
}
```

7.109.5 Property definition

Table 226 defines the Properties that are part of the "oic.r.orfid.station" Resource Type.

Table 226 – The Property definitions of the Resource with type "rt" = "oic.r.orfid.station".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
process	integer	No	Read Only	The process step that is being

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				performed at this station.
actionrequest	integer	Yes	Read Write	The action request identifier.
event	boolean	Yes	Read Write	The Event indicator, when True, the action request should be applied to the product identified by the tagid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.109.6 CRUDN behaviour

Table 227 defines the CRUDN operations that are supported on the "oic.r.orfid.station" Resource Type.

Table 227 – The CRUDN operations of the Resource with type "rt" = "oic.r.orfid.station".

Create	Read	Update	Delete	Notify
	get	post		observe

7.110 Optical RFID Tag

7.110.1 Introduction

The Property "tagid" is an integer showing the currently read optical augmented RFID tag's identity information.

7.110.2 Example URI

/ORFIDTagResURI

7.110.3 Resource type

The Resource Type is defined as: "oic.r.orfid.tag".

7.110.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Optical RFID Tag",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ORFIDTagResURI" : {
```

```
      "get": {
        "description": "The Property \"tagid\" is an integer showing the currently read optical
augmented RFID tag's identity information.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the tag information from optical augmented RFID reader in
smart factory environment.",
              "x-example":
                {
                  "rt": ["oic.r.orfid.tag"],
                  "if": ["oic.if.r", "oic.if.baseline"],
                  "tagid": 10965742,
                  "reading": true
                },
              "schema": { "$ref": "#/definitions/ORFID" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ORFID" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.orfid.tag"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "tagid": {
          "description": "The tag read by the RFID reader.",
          "readOnly": true,
          "type": "integer"
        },
        "reading": {
          "description": "The reading indication. true: the tagid is read e.g. being valid. false:
the tagid is invalid.",
          "readOnly": true,
          "type": "boolean"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
```

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```
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["tagid", "reading"]
    }
  }
}
```

7.110.5 Property definition

Table 228 defines the Properties that are part of the "oic.r.orfid.tag" Resource Type.

Table 228 – The Property definitions of the Resource with type "rt" = "oic.r.orfid.tag".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
tagid	integer	Yes	Read Only	The tag read by the RFID reader.
reading	boolean	Yes	Read Only	The reading indication. true: the tagid is read e.g. being valid. false: the tagid is invalid.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.110.6 CRUDN behaviour

Table 229 defines the CRUDN operations that are supported on the "oic.r.orfid.tag" Resource Type.

Table 229 – The CRUDN operations of the Resource with type "rt" = "oic.r.orfid.tag".

Create	Read	Update	Delete	Notify
	get			observe

7.111 PowerSource

7.111.1 Introduction

This Resource list the available power sources for the Device. The Property "powersources" is a list that is read only and is informative only. The Property "active" indicates the currently active power source from the provided list.
If there is more than 1 power source active, use multiple Resources to indicate the active power sources. If the active power source is unknown use the value "unknown".

7.111.2 Example URI

/PowerSourceResURI

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7.111.3 Resource type

The Resource Type is defined as: "oic.r.powersource".

7.111.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "PowerSource",
    "version": "2021-02-01",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019, 2021 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PowerSourceResURI" : {
      "get": {
        "description": "This Resource list the available power sources for the Device. The Property
\"powersources\" is a list that is read only and is informative only. The Property \"active\"
indicates the currently active power source from the provided list. \nIf there is more than 1 power
source active, use multiple Resources to indicate the active power sources. If the active power
source is unknown use the value \"unknown\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the list of available power sources.",
            "x-example":
            {
              "rt": ["oic.r.powersource"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "powersources": [
                "DC power",
                "Internal Battery",
                "External Battery",
                "Power over Ethernet",
                "USB",
                "AC (Mains) Power",
                "Solar"
              ],
              "sourcefault": false,
              "active": "AC (Mains) Power"
            },
            "schema": { "$ref": "#/definitions/powerSourceSchema" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "powersourcesenum": {
      "type": "string",
      "readOnly": true,
```

```
      "enum": [
        "unknown",
        "DC power",
        "Internal Battery",
        "External Battery",
        "Power over Ethernet",
        "USB",
        "AC (Mains) Power",
        "Solar"
      ]
    },
    "powerSourceSchema" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.powersource"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "powersources": {
          "items": {
            "$ref": "#/definitions/powersourcesenum"
          },
          "minItems": 1,
          "uniqueItems": true,
          "type": "array"
        },
        "sourcefault": {
          "description": "Fault detected in currently active power source. True = fault detected",
          "readOnly": true,
          "type": "boolean"
        },
        "active": {
          "$ref": "#/definitions/powersourcesenum",
          "description": "The currently active power source. One of the powersources"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["powersources","active"]
    }
  }
```

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```
}
```

7.111.5 Property definition

Table 230 defines the Properties that are part of the "oic.r.powersource" Resource Type.

Table 230 – The Property definitions of the Resource with type "rt" = "oic.r.powersource".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
powersources	array: see schema	Yes	Read Write	
sourcefault	boolean	No	Read Only	Fault detected in currently active power source. True = fault detected
active	multiple types: see schema	Yes	Read Write	The currently active power source. One of the powersources
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.111.6 CRUDN behaviour

Table 231 defines the CRUDN operations that are supported on the "oic.r.powersource" Resource Type.

Table 231 – The CRUDN operations of the Resource with type "rt" = "oic.r.powersource".

Create	Read	Update	Delete	Notify
	get			observe

7.112 Print Queue

7.112.1 Introduction

This Resource describes the items in a Printer Queue. The Properties "uri" and "status" are read only items that cannot be changed through this resource.

7.112.2 Example URI

/PrintQueueResURI

7.112.3 Resource type

The Resource Type is defined as: "oic.r.printer.queue".

7.112.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Print Queue",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
```

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```
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PrintQueueResURI" : {
      "get": {
        "description": "This Resource describes the items in a Printer Queue. The Properties \"uri\"
and \"status\" are read only items that cannot be changed through this resource.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the current Print Queue.",
            "x-example": {
              "rt": ["oic.r.printer.queue"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "queue": [
                {
                  "uri": "file://10.10.10.10/3dprinter/queueitem/1",
                  "status": "Printing"
                },
                {
                  "uri": "file://10.10.10.10/3dprinter/queueitem/2",
                  "status": "Pending"
                }
              ]
            },
            "schema": { "$ref": "#/definitions/PrintQueue" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "PrintQueue" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.printer.queue"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "queue": {
          "description": "The array of queue items for the printer.",
          "items": {
            "properties": {
              "status": {
                "description": "The status of the queue item.",
                "enum": [
                  "Printing",
                  "Pending",
                  "Paused",
```

```
                  "Error",
                  "Unknown"
                ],
                "readOnly": true,
                "type": "string"
              },
              "uri": {
                "description": "The uri of the queue item (i.e. the actual file).",
                "format": "uri",
                "maxLength": 256,
                "readOnly": true,
                "type": "string"
              }
            },
            "required": [
              "uri",
              "status"
            ],
            "type": "object"
          },
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["queue"]
    }
  }
}
```


7.112.5 Property definition

Table 232 defines the Properties that are part of the "oic.r.printer.queue" Resource Type.

Table 232 – The Property definitions of the Resource with type "rt" = "oic.r.printer.queue".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
queue	array: see schema	Yes	Read Only	The array of queue items for the printer.
n	multiple types: see schema	No	Read Write	

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id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.112.6 CRUDN behaviour

Table 233 defines the CRUDN operations that are supported on the "oic.r.printer.queue" Resource Type.

Table 233 – The CRUDN operations of the Resource with type "rt" = "oic.r.printer.queue".

Create	Read	Update	Delete	Notify
	get			observe

7.113 Pulse Rate

7.113.1 Introduction

This Resource describes the Properties associated with a person's pulse rate.
The unit, which is the default unit, is bpm.
The pulserate and unit Properties are read-only values that are provided by the Server.
When range is omitted the default is 0 to +MAXFLOAT.

7.113.2 Example URI

/PulseRateResURI

7.113.3 Resource type

The Resource Type is defined as: "oic.r.pulserate".

7.113.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Rate",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulseRateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's pulse
rate.\nThe unit, which is the default unit, is bpm.\nThe pulserate and unit Properties are read-only
values that are provided by the Server.\nWhen range is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
```

```
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.pulserate"
            ],
            "pulserate": 80,
            "range": [20, 220],
            "step": 1
          },
          "schema": {
            "$ref": "#/definitions/PulseRate"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "PulseRate": {
    "properties": {
      "rt": {
        "description": "Resource Type",
        "items": {
          "enum": [
            "oic.r.pulserate"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "pulserate": {
        "description": "Pulse rate in bpm.",
        "minimum": 0,
        "readOnly": true,
        "type": "integer"
      },
      "if": {
        "description": "The OCF Interface set supported by this Resource",
        "items": {
          "enum": [
            "oic.if.s",
            "oic.if.baseline"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 1,
        "readOnly": true,
        "uniqueItems": true,
        "type": "array"
      },
      "range": {
        "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
```

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```
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type": "object",
      "required": [
        "pulserate"
      ]
    }
  }
}
```

7.113.5 Property definition

Table 234 defines the Properties that are part of the "oic.r.pulserate" Resource Type.

Table 234 – The Property definitions of the Resource with type "rt" = "oic.r.pulserate".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
pulserate	integer	Yes	Read Only	Pulse rate in bpm.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

7.113.6 CRUDN behaviour

Table 235 defines the CRUDN operations that are supported on the "oic.r.pulserate" Resource Type.

Table 235 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulserate".

Create	Read	Update	Delete	Notify
	get			observe

7.114 Sensor Properties

7.114.1 Introduction

This Resource describes the properties which guide the reporting of a state change of a Sensor. The Property "silenttime" represents the period after which a state change report was sent where the Sensor state change is not reported.
The Property "sensitivity" represents the level at which the sensor detects a state change. These values are completely dependent on the type of Sensor and the manufacturer capability, so no range restrictions are used.
The Properties "range", "step" and "precision" are only applied to the "sensitivity" Property.

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7.114.2 Example URI

/SensorPropsResURI

7.114.3 Resource type

The Resource Type is defined as: "oic.r.sensor.props".

7.114.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor Properties",
    "version": "20190215",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2016-2017, 2019 Open Connectivity Foundation, Inc. All rights
reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SensorPropsResURI" : {
      "get": {
        "description": "This Resource describes the properties which guide the reporting of a state
change of a Sensor.\nThe Property \"silenttime\" represents the period after which a state change
report was sent where the Sensor state change is not reported.\nThe Property \"sensitivity\"
represents the level at which the sensor detects a state change.\nThese values are completely
dependent on the type of Sensor and the manufacturer capability, so no range restrictions are
used.\nThe Properties \"range\", \"step\" and \"precision\" are only applied to the \"sensitivity\"
Property.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Gets current Sensor Property values.",
              "x-example":
                {
                  "rt": ["oic.r.sensor.props"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "silenttime": 10,
                  "sensitivity": 20.5
                },
              "schema": { "$ref": "#/definitions/SensorProps" }
            }
        }
      },
      "post": {
        "description": "Sets Sensor Property values\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/SensorProps" },
            "x-example":
              {
                "silenttime": 20,
                "sensitivity": 10.75
              }
          }
        ],
        "responses": {
```

```
            "200": {
              "description" : "",
              "x-example":
                {
                  "silenttime": 20,
                  "sensitivity": 10.75
                },
              "schema": { "$ref": "#/definitions/SensorProps" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SensorProps" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.props"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "silenttime": {
          "description": "The time in seconds from the previous report that the Sensor restrains
from sending a state change. This is used to avoid repeated state change reports.",
          "type": "integer"
        },
        "sensitivity": {
          "description": "The level of the detection accuracy of the Sensor. This is used to control
the level at which the Sensor detects a state change. The \"range\" Property should be specified per
manufacturer device capabilities.",
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
```

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```
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["silenttime", "sensitivity"]
    }
  }
}
```

7.114.5 Property definition

Table 236 defines the Properties that are part of the "oic.r.sensor.props" Resource Type.

Table 236 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.props".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
silenttime	integer	Yes	Read Write	The time in seconds from the previous report that the Sensor restrains from sending a state change. This is used to avoid repeated state change reports.
sensitivity	number	Yes	Read Write	The level of the detection accuracy of the Sensor. This is used to control the level at which the Sensor detects a state change. The "range" Property should be specified per manufacturer device capabilities.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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7.114.6 CRUDN behaviour

Table 237 defines the CRUDN operations that are supported on the "oic.r.sensor.props" Resource Type.

Table 237 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.props".

Create	Read	Update	Delete	Notify
	get	post		observe

7.115 User ID

7.115.1 Introduction

This Resource describes the Properties associated with user id of an OCF Client.
The userid Property is a single value of type string.
The userid Property is a read-only value that is provided by the Server.

7.115.2 Example URI

/UserIDResURI

7.115.3 Resource type

The Resource Type is defined as: "oic.r.userid".

7.115.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "User ID",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/UserIDResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with user id of an OCF
Client.\nThe userid Property is a single value of type string.\nThe userid Property is a read-only
value that is provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.userid"
              ],
              "userid": "USER1"
```

```
            },
            "schema": {
              "$ref": "#/definitions/UserID"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "UserID": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "userid": {
          "description": "Id of a patient/user of healthcare devices",
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "userid"
      ]
    }
  }
}
```

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7.115.5 Property definition

Table 238 defines the Properties that are part of the "oic.r.userid" Resource Type.

Table 238 – The Property definitions of the Resource with type "rt" = "oic.r.userid".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
userid	string	Yes	Read Only	Id of a patient/user of healthcare devices
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.115.6 CRUDN behaviour

Table 239 defines the CRUDN operations that are supported on the "oic.r.userid" Resource Type.

Table 239 – The CRUDN operations of the Resource with type "rt" = "oic.r.userid".

Create	Read	Update	Delete	Notify
	get			observe

7.116 Calorific Value

7.116.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas)
The calorific value is a number
the calorific value is a measure of the available heat energy, used as part of the calculation to convert a volume of a fuel (e.g. m3) to an energy value (e.g. KWh).

7.116.2 Example URI

/CalorificValueResURI

7.116.3 Resource type

The Resource Type is defined as: "oic.r.calorificvalue".

7.116.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Calorific Value",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CalorificValueResURI" : {
      "get": {
```

```
        "description": "This Resource describes Properties associated with the energy associated
with the consumption of different fuels (including natural gas)\nThe calorific value is a
number\nthe calorific value is a measure of the available heat energy, used as part of the
calculation to convert a volume of a fuel (e.g. m3) to an energy value (e.g. KWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example": {
              "rt":     ["oic.r.calorificvalue"],
              "calorific":  39.2
            },
            "schema": { "$ref": "#/definitions/Calorific" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Calorific" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.calorificvalue"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "if" :  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": ["oic.if.baseline", "oic.if.r"],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "precision" : {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "calorific" :  {
          "description": "Calorific value of fuel",
```

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```
          "readOnly": true,
          "type": "number",
                     "minimum": 0,
          "exclusiveMinimum": true
        }
      },
      "type" : "object",
      "required": ["calorific"]
    }
  }
}
```

7.116.5 Property definition

Table 240 defines the Properties that are part of the "oic.r.calorificvalue" Resource Type.

Table 240 – The Property definitions of the Resource with type "rt" = "oic.r.calorificvalue".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
precision	number	No	Read Only	Accuracy granularity of the exposed value
calorific	number	Yes	Read Only	Calorific value of fuel

7.116.6 CRUDN behaviour

Table 241 defines the CRUDN operations that are supported on the "oic.r.calorificvalue" Resource Type.

Table 241 – The CRUDN operations of the Resource with type "rt" = "oic.r.calorificvalue".

Create	Read	Update	Delete	Notify
	get			observe

7.117 Conversion Factor

7.117.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of different fuels (including natural gas)
The conversion factor is a number used as part of the calculation to convert gas volume to gas energy. The value used for this calculation is generally defined by local regulations and the conversion factor resource is therefore configurable.
Provides the conversion factor used/required as part of the calculation to convert from fuel volume (m3) to fuel energy (kWh).

7.117.2 Example URI

/ConversionFactorResURI

7.117.3 Resource type

The Resource Type is defined as: "oic.r.conversionfactor".

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7.117.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Conversion Factor",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ConversionFactorResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated
with the consumption of different fuels (including natural gas)\nThe conversion factor is a number
used as part of the calculation to convert gas volume to gas energy. The value used for this
calculation is generally defined by local regulations and the conversion factor resource is
therefore configurable.\nProvides the conversion factor used/required as part of the calculation to
convert from fuel volume (m3) to fuel energy (kWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":  {
              "rt":     ["oic.r.conversionfactor"],
              "conversion": 1.02264
            },
            "schema": { "$ref": "#/definitions/Conversion" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Conversion" : {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.conversionfactor"]
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "if" :  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
```

```
            "type": "string",
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "conversion" : {
          "description": "Conversion factor to convert a volume of a fuel to energy consumption",
          "readOnly": true,
          "type": "number",
          "minimum": 0,
          "exclusiveMinimum": true
        },
        "precision" :  {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        }
      },
      "type" : "object",
      "required": ["conversion"]
    }
  }
}
```

7.117.5 Property definition

Table 242 defines the Properties that are part of the "oic.r.conversionfactor" Resource Type.

Table 242 – The Property definitions of the Resource with type "rt" = "oic.r.conversionfactor".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
conversion	number	Yes	Read Only	Conversion factor to convert a volume of a fuel to energy consumption
precision	number	No	Read Only	Accuracy granularity of the exposed value

7.117.6 CRUDN behaviour

Table 243 defines the CRUDN operations that are supported on the "oic.r.conversionfactor" Resource Type.

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Table 243 – The CRUDN operations of the Resource with type "rt" = "oic.r.conversionfactor".

Create	Read	Update	Delete	Notify
	get			observe

7.118 Gas Consumption

7.118.1 Introduction

This Resource describes Properties associated with the energy associated with the consumption of natural gas
The gas value is in kilowatt hours [kWh].
The volume value is in metres cubed [m3].
Provides the cumulative gas energy, the cumulative gas volume and the calorific value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas energy (KWh).

7.118.2 Example URI

/GasConsumptionResURI

7.118.3 Resource type

The Resource Type is defined as: "oic.r.gas.consumption".

7.118.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Consumption",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasConsumptionResURI" : {
      "get": {
        "description": "This Resource describes Properties associated with the energy associated
with the consumption of natural gas\nThe gas value is in kilowatt hours [kWh].\nThe volume value is
in metres cubed [m3].\nProvides the cumulative gas energy, the cumulative gas volume and the
calorific value and conversion factor used/required to convert from gas volume (m3[TB1]) to gas
energy (KWh).\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example": {
              "rt":     ["oic.r.gas.consumption"],
              "gas":  11135.41,
              "volume": 1000.0
            },
            "schema": { "$ref": "#/definitions/Consumption" }
          }
        }
      }
    }
  },
  "parameters": {
```

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```
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Consumption" : {
      "properties": {
        "rt":  {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.gas.consumption"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if":  {
          "description": "The OCF Interfaces supported by this Resource",
          "items": {
            "enum": ["oic.if.r", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "gas" :  {
          "description": "gas energy consumed in kWh",
          "readOnly": true,
          "type": "number",
                     "minimum": 0
        },
        "precision" :  {
          "description": "Accuracy granularity of the exposed value",
          "readOnly": true,
          "type": "number"
        },
        "volume" :  {
          "description": "gas volume consumed in m3 (metres cubed)",
          "readOnly": true,
          "type": "number",
                     "minimum": 0
        }
      },
      "type" : "object",
      "required": ["gas"]
    }
  }
}
```

7.118.5 Property definition

Table 244 defines the Properties that are part of the "oic.r.gas.consumption" Resource Type.

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Table 244 – The Property definitions of the Resource with type "rt" = "oic.r.gas.consumption".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
if	array: see schema	No	Read Only	The OCF Interfaces supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
gas	number	Yes	Read Only	gas energy consumed in kWh
precision	number	No	Read Only	Accuracy granularity of the exposed value
volume	number	No	Read Only	gas volume consumed in m3 (metres cubed)

7.118.6 CRUDN behaviour

Table 245 defines the CRUDN operations that are supported on the "oic.r.gas.consumption" Resource Type.

Table 245 – The CRUDN operations of the Resource with type "rt" = "oic.r.gas.consumption".

Create	Read	Update	Delete	Notify
	get			observe

7.119 Gas Usage

7.119.1 Introduction

This Resource describes a cumulative time-based gas usage query.
The Resource is a Collection of:
TimePeriod Resource
Gas Consumption Resource

7.119.2 Example URI

/GasUsageResURI

7.119.3 Resource type

The Resource Type is defined as: "oic.r.gas.usage".

7.119.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Gas Usage",
    "version": "2019-03-18",
    "license": {
      "name": "OCF Data Model License",
      "url": "https://openconnectivityfoundation.github.io/core/LICENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
```

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```
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GasUsageResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\nThe Collection has
a single instance of a Link per Resource Type.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            [
              {
                "href": "/TimeIntervalResURI",
                "rt":   ["oic.r.time.period"],
                "if":   ["oic.if.a","oic.if.baseline"],
                "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
              },
              {
                "href": "/GasConsumptionResURI",
                "rt":   ["oic.r.gas.consumption"],
                "if":   ["oic.if.s","oic.if.baseline"],
                "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
              }
            ],
            "schema": { "$ref": "#/definitions/links" }
          }
        }
      }
    },
    "/GasUsageResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe
Resource is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            {
              "rt": ["oic.r.gas.usage"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "resources": [
                {
                  "href": "/TimeIntervalResURI",
                  "rt":   ["oic.r.time.period"],
                  "if":   ["oic.if.a","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                },
                {
                  "href": "/GasConsumptionResURI",
                  "rt":   ["oic.r.gas.consumption"],
                  "if":   ["oic.if.s","oic.if.baseline"],
                  "eps":  [{"ep": "coaps://[fe80::b1d6]:1122"}]
                }
              ]
            },
            "schema": { "$ref": "#/definitions/Usage" }
          }
        }
      }
    },
    "/GasUsageResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource describes a cumulative time-based gas usage query.\nThe
```

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```
Resource is a Collection of:\n  TimePeriod Resource\n  Gas Consumption Resource\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "Success path response for the Resource",
            "x-example":
            [
              {
                "href": "/TimeIntervalResURI",
                "rep": {
                  "startTime":"2018-01-09T14:30Z",
                  "stopTime": "2018-01-09T14:45Z"
                }
              },
              {
                "href": "/GasConsumptionResURI",
                "rep": {
                  "gas":  11135.41,
                  "volume": 1000.0
                }
              }
            ],
            "schema": { "$ref": "#/definitions/batch" }
          }
        }
      },
      "post": {
        "description": "Sets the current time period. A Client may also post directly to the exposed
URL for the Time Period Resource.\n",
        "x-method": ["optional"],
        "parameters": [
          {"$ref": "#/parameters/interface-b"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/batchupdate" },
            "x-example":
            [
              {
                "href": "/TimePeriodResURI",
                "rep": {
                  "startTime":"2018-01-15T16:30Z",
                  "stopTime": "2018-01-16T16:30Z"
                }
              }
            ]
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response code\n"
          }
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
    },
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    }
```

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```
  },
  "definitions": {
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      },
      "minItems": 2,
      "maxItems": 4
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The interface set supported by the Linked Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.a",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the linked Resource",
          "items": {
            "enum": [
              "oic.r.time.period",
              "oic.r.gas.consumption",
              "oic.r.conversionfactor",
              "oic.r.calorificvalue"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
```

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```
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    },
    "batch": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 2,
      "maxItems": 4,
      "type": "array",
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitio
ns/TimePeriod"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GasConsumptionResURI.swagger.json#/defin
itions/Consumption"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/CalorificValueResURI.swagger.json#/defin
itions/Calorific"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ConversionFactorResURI.swagger.json#/def
initions/Conversion"
              }
            ]
          }
        },
        "required": ["href","rep"]
      }
    },
    "batchupdate" : {
      "title": "Collection Batch Update Format",
      "minItems": 1,
      "type": "array",
      "items": {
```

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```
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimePeriodResURI.swagger.json#/definitio
ns/TimePeriod"
          }
        }
      }
    },
    "Usage" : {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.gas.usage"],
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "rts" :  {
          "description": "Allowed Resource Type",
          "items": {
            "type": "string",
            "enum":
["oic.r.gas.consumption","oic.r.time.period","oic.r.calorificvalue","oic.r.conversionfactor"],
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "rts-m" :  {
          "description": "Mandatory Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.gas.consumption","oic.r.time.period"],
            "maxLength": 64
          },
          "minItems": 2,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        },
        "n": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref" :
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "resources" :  {
          "$ref": "#/definitions/links"
        },
        "if" : {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
```

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```
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["resources"]
    }
  }
}
```

7.119.5 Property definition

Table 246 defines the Properties that are part of the "oic.r.gas.usage" Resource Type.

Table 246 – The Property definitions of the Resource with type "rt" = "oic.r.gas.usage".

Property name	Value type	Mandatory	Access mode	Description
if	array: see schema	Yes	Read Only	The interface set supported by the Linked Resource
rt	array: see schema	Yes	Read Only	Resource Type of the linked Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema		Read Write	
rep	multiple types: see schema		Read Write	
rt	array: see schema	No	Read Only	Resource Type

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rts	array: see schema	No	Read Only	Allowed Resource Type
rts-m	array: see schema	No	Read Only	Mandatory Resource Type
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
resources	multiple types: see schema	Yes	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource

7.119.6 CRUDN behaviour

Table 247 defines the CRUDN operations that are supported on the "oic.r.gas.usage" Resource Type.

Table 247 – The CRUDN operations of the Resource with type "rt" = "oic.r.gas.usage".

Create	Read	Update	Delete	Notify
	get			observe

7.120 Impact Sensor

7.120.1 Introduction

This Resource provides a status and properties of an impact sensor. Included is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g force).

7.120.2 Example URI

/ImpactSensorResURI

7.120.3 Resource type

The Resource Type is defined as: "oic.r.impactsensor".

7.120.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Impact Sensor",
    "version": "2019-03-21",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ImpactSensorResURI" : {
      "get": {
        "description": "This Resource provides a status and properties of an impact sensor. Included
is the current status (boolean), horizontal and vertical direction (in degrees) and impact level (g
force).",
        "parameters": [
          {"$ref": "#/parameters/interface"}
```

```
        ],
        "responses": {
            "200": {
              "description" : "The success path response for the Resource.",
              "x-example":
                {
                  "rt": ["oic.r.impactsensor"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "impactstatus": true,
                  "impactlevel": 2.25,
                  "impactdirectionhorizontal": 120.0,
                  "impactdirectionvertical": 240.0
                },
              "schema": { "$ref": "#/definitions/ImpactSensor" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ImpactSensor": {
      "properties": {
        "rt":  {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.impactsensor"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "impactstatus": {
          "type": "boolean",
          "readOnly": true,
          "description": "The \"impactstatus\" Property indicates the impact as: \"true\" A physical
impact is detected, \"false\" Normal status, an impact is not detected."
        },
        "impactlevel": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactlevel\" Property provides the level of impact. The unit is in
\"G\" (G-force)."
        },
        "impactdirectionhorizontal": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactdirectionhorizontal\" Property shows a horizontal direction
where the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and
clockwise increment.",
          "minimum": 0,
          "maximum": 360
        },
        "impactdirectionvertical": {
          "type": "number",
          "readOnly": true,
          "description": "The \"impactdirectionvertical\" Property shows a vertical direction where
the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and upward
increment.",
          "minimum": 0,
          "maximum": 360
        },
```

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```
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [ "impactstatus" ]
    }
  }
}
```

7.120.5 Property definition

Table 248 defines the Properties that are part of the "oic.r.impactsensor" Resource Type.

Table 248 – The Property definitions of the Resource with type "rt" = "oic.r.impactsensor".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
impactstatus	boolean	Yes	Read Only	The "impactstatus" Property indicates the impact as: "true" A physical impact is detected, "false" Normal status, an impact is not detected.
impactlevel	number	No	Read Only	The "impactlevel" Property provides the level of impact. The unit is in "G" (G-force).
impactdirectionhorizontal	number	No	Read Only	The "impactdirectionhorizontal" Property shows a horizontal direction where the impact comes from. The value is 0 to 360 degrees. 0 is the front of the sensor and clockwise increment.
impactdirectionvertical	number	No	Read Only	The "impactdirectionvertical" Property shows a vertical direction where the impact comes from. The value is 0 to 360 degrees. 0 is the

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				front of the sensor and upward increment.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.120.6 CRUDN behaviour

Table 249 defines the CRUDN operations that are supported on the "oic.r.impactsensor" Resource Type.

Table 249 – The CRUDN operations of the Resource with type "rt" = "oic.r.impactsensor".

Create	Read	Update	Delete	Notify
	get			observe

7.121 KeyPadChar

7.121.1 Introduction

This Resource describes a char (0-9,*,#) which is selected on a number keypad.

7.121.2 Example URI

/KeyPadCharResURI

7.121.3 Resource type

The Resource Type is defined as: "oic.r.keypadchar".

7.121.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "KeyPadChar",
    "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/KeyPadCharResURI" : {
      "get": {
        "description": "This Resource describes a char (0-9,*,#) which is selected on a number
keypad.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource",
              "x-example":
                {
                  "rt":     ["oic.r.keypadchar"],
                  "if":     ["oic.if.rw", "oic.if.baseline"],
```

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```
                "keyvalue":  "7"
              },
            "schema": { "$ref": "#/definitions/KeyPadChar" }
          }
        }
      },
      "post": {
        "description": "This Resource describes a char (0-9, *, #) which is selected on a number
keypad.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/KeyPadChar" },
            "x-example":
              {
                "keyvalue": "4"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "keyvalue": "4"
                },
              "schema": { "$ref": "#/definitions/KeyPadChar" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "KeyPadChar" : {
      "properties": {
        "rt":  {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.keypadchar"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "keyvalue":  {
          "type" : "string",
          "enum": [
             "0",
             "1",
             "2",
             "3",
             "4",
             "5",
             "6",
             "7",
             "8",
             "9",
             "*",
```

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```
            "#"
           ],
         "description": "The value of the key pad char."
       },
       "n": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
       },
       "id": {
           "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
       },
       "if":  {
         "description": "The OCF Interface set supported by this Resource.",
         "items": {
           "enum": [
             "oic.if.baseline",
             "oic.if.rw"
           ],
           "type": "string"
         },
         "minItems": 2,
         "uniqueItems": true,
         "readOnly": true,
         "type": "array"
       }
     },
     "type": "object",
     "required": ["keyvalue"]
   }
  }
}
```

7.121.5 Property definition

Table 250 defines the Properties that are part of the "oic.r.keypadchar" Resource Type.

Table 250 – The Property definitions of the Resource with type "rt" = "oic.r.keypadchar".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
keyvalue	string	Yes	Read Write	The value of the key pad char.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.121.6 CRUDN behaviour

Table 251 defines the CRUDN operations that are supported on the "oic.r.keypadchar" Resource Type.

Table 251 – The CRUDN operations of the Resource with type "rt" = "oic.r.keypadchar".

Create	Read	Update	Delete	Notify
	get	post		observe

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7.122 Opaque Data

7.122.1 Introduction

This Resource defines opaque data that can be transfered between endpoints where the data itself is not interpretable by the OCF endpoints.
The stringdata is a string of ASCII characters.

7.122.2 Example URI

/OpaqueDataResURI

7.122.3 Resource type

The Resource Type is defined as: "oic.r.opaquedata".

7.122.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Opaque Data",
   "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/OpaqueDataResURI" : {
      "get": {
        "description": "This Resource defines opaque data that can be transfered between endpoints
where the data itself is not interpretable by the OCF endpoints.\nThe stringdata is a string of
ASCII characters.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.opaquedata"],
                  "if": ["oic.if.rw", "oic.if.baseline"],
                  "payload": "asdf0123",
                  "payloadtype": "switch-get",
                  "encoding":  "base64",
                  "size": 8,
                  "hash": "A1A1",
                  "system": "foreign system"
                },
              "schema": { "$ref": "#/definitions/OpaqueData" }
            }
        }
      },
      "post": {
        "description": "",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/OpaqueData" },
            "x-example":
```

```
              {
                "payload": "asdf0123",
                "payloadtype": "switch-get",
                "encoding": "base64",
                "size": 8,
                "hash": "A1A1",
                "system": "foreign system"
              }
            }
          ],
          "responses": {
              "200": {
                "description" : "",
                "x-example":
                  {
                    "payload": "asdf0123",
                    "payloadtype": "switch-get",
                    "encoding": "base64",
                    "size": 8,
                    "hash": "A1A1",
                    "system": "foreign system"
                  },
                "schema": { "$ref": "#/definitions/OpaqueData" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.rw", "oic.if.baseline"]
      }
    },
    "definitions": {
      "OpaqueData" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "maxLength": 64,
              "type": "string",
              "enum": ["oic.r.opaquedata"]
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "payload": {
            "type": "string",
            "description": "This Property contains the opaque data."
          },
          "encoding": {
            "type": "string",
            "description": "This Property describes the encoding of the payload, e.g. binary as
base64, json, xml, utf-8."
          },
          "payloadtype": {
            "type": "string",
            "description": "This Property describes the identification of the payload, e.g. what the
payload is representing ."
          },
          "size": {
            "type": "integer",
            "description": "The size in bytes of the decoded binary object."
          },
          "hash": {
            "type": "string",
            "description": "The hash code of the blob. If present, it is used to check the decoded
```

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```
content of the object data point for integrity. The algorithm used for generating the hash value is
SHA-2 [15]. The data point contains the hash as a hex encoded value."
        },
        "system": {
          "type": "string",
          "description": "The eco system that is using the payload."
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [ "payload", "encoding", "system" ]
    }
  }
}
```

7.122.5 Property definition

Table 252 defines the Properties that are part of the "oic.r.opaquedata" Resource Type.

Table 252 – The Property definitions of the Resource with type "rt" = "oic.r.opaquedata".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
payload	string	Yes	Read Write	This Property contains the opaque data.
encoding	string	Yes	Read Write	This Property describes the encoding of the payload, e.g. binary as base64, json, xml, utf-8.
payloadtype	string	No	Read Write	This Property describes the identification of the payload, e.g. what the payload is representing .
size	integer	No	Read Write	The size in bytes of the decoded binary object.
hash	string	No	Read Write	The hash code of the blob. If present, it is used to check the decoded content of the object data point for integrity. The algorithm used for generating the hash value is SHA-2 [15]. The data point contains the hash as

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				a hex encoded value.
system	string	Yes	Read Write	The eco system that is using the payload.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.122.6 CRUDN behaviour

Table 253 defines the CRUDN operations that are supported on the "oic.r.opaquedata" Resource Type.

Table 253 – The CRUDN operations of the Resource with type "rt" = "oic.r.opaquedata".

Create	Read	Update	Delete	Notify
	get	post		observe

7.123 User Info for Application Layer

7.123.1 Introduction

This Resource defines credentials for user to application layer login. This does not relate to OCF Device to Device or Device to Cloud authentication. The username, password and token are strings.

7.123.2 Example URI

/UserInfoResURI

7.123.3 Resource type

The Resource Type is defined as: "oic.r.userinfo".

7.123.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "User Info for Application Layer",
    "version": "12122018",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UserInfoResURI" : {
      "get": {
        "description": "This Resource defines credentials for user to application layer login. This
does not relate to OCF Device to Device or Device to Cloud authentication. The username, password
and token are strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "Success path response for the Resource, note that the info supplied
is NOT returned on RETRIEVE",
              "x-example":
                {
```

```
                "rt": ["oic.r.userinfo"],
                "if": ["oic.if.rw", "oic.if.baseline"]
              },
            "schema": { "$ref": "#/definitions/UserInfo-retrieve" }
          }
        }
      },
      "post": {
        "description": "This Resource defines credentials for user to application layer login. This
does not relate to OCF Device to Device or Device to Cloud authentication. The username, password
and token are strings.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/UserInfo-update" },
            "x-example":
              {
                "username": "username",
                "password": "password",
                "token": "A1A1"
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "The success path response for the Resource.",
              "x-example":
                {
                  "username": "username",
                  "password": "password",
                  "token": "A1A1"
                },
              "schema": { "$ref": "#/definitions/UserInfo-update" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UserInfo-retrieve": {
      "properties": {
        "rt":  {
          "description": "The Resource Type.",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.userinfo"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```

```
schema.json#/definitions/id"
        },
        "if":  {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [ ]
    },
    "UserInfo-update": {
      "properties": {
        "username": {
          "type": "string",
          "description": "Login name."
        },
        "password": {
          "type": "string",
          "description": "Login password."
        },
        "token": {
          "type": "string",
          "description": "Authentication token."
        }
       },
      "type": "object",
      "required": [ ]
    }
  }
}
```

7.123.5 Property definition

Table 254 defines the Properties that are part of the "oic.r.userinfo" Resource Type.

Table 254 – The Property definitions of the Resource with type "rt" = "oic.r.userinfo".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
username	string	No	Read Write	Login name.
password	string	No	Read Write	Login password.
token	string	No	Read Write	Authentication token.

7.123.6 CRUDN behaviour

Table 255 defines the CRUDN operations that are supported on the "oic.r.userinfo" Resource Type.

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Table 255 – The CRUDN operations of the Resource with type "rt" = "oic.r.userinfo".

Create	Read	Update	Delete	Notify
	get	post		observe

7.124 IAS Zone Info

7.124.1 Introduction

This Resource describes information associated with an Intruder Alert System (IAS) Zone.
Zone Type provides the information about the type of device/alarm.
Zone Status provides an array which has 10 items representing various status information(e.g., battery status, mode, alarm (Up to two), supervision of IAS network, etc.
A Device implementing this Resource can be enrolled to IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device and update this Resource on the Device.
This Resource may provide multiple sensitivity levels (>2).
NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be selected as currentzonesensitivityLevel.

7.124.2 Example URI

/IASZoneInfoResURI

7.124.3 Resource type

The Resource Type is defined as: "oic.r.iaszoneinfo".

7.124.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Info",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneInfoResURI" : {
      "get": {
        "description": "This Resource describes information associated with an Intruder Alert System
(IAS) Zone.\nZone Type provides the information about the type of device/alarm.\nZone Status
provides an array which has 10 items representing various status information(e.g., battery status,
mode, alarm (Up to two), supervision of IAS network, etc.\nA Device implementing this Resource can
be enrolled to IAS Control and Indicator Equipment (CIE). IAS CIE can allocate an ID for the Device
and update this Resource on the Device.\nThis Resource may provide multiple sensitivity levels (>2).
NumberofZoneSensitivityLevelSupported provides the number of the levels. A specific level can be
selected as currentzonesensitivityLevel.",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.iaszoneinfo"],
              "zonetype": "motionsensor",
              "zonestatus": {
```

```
              "alarms": ["presence"],
              "tamper": false,
              "zonestatusreports": "statuschangeonly",
              "fault": false,
              "test": false
            },
            "iascieaddress": "ACDE9F56A3FE6B98",
            "zonestate": true,
            "zoneid": 64,
            "numzonesensitivitylevel": 3,
            "currentzonesensitivitylevel": 2
          },
          "schema": { "$ref": "#/definitions/IASZoneInfo" }
        }
      }
    },
    "post": {
      "description": "Sets the current sensitivity level of the IASZone.\n",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/IASZoneInfo-Update" },
          "x-example":
            {
              "currentzonesensitivitylevel": 3
            }
        }
      ],
      "responses": {
        "200": {
          "description" : "Success path response code\n"
        }
      }
    }
  }
},
"parameters": {
  "interface-all" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw", "oic.if.baseline"]
  },
  "interface-rw" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw"]
  }
},
"definitions": {
  "IASZoneInfo" : {
    "properties": {
      "rt" : {
        "description": "Resource Type",
        "items": {
          "type": "string",
          "enum": ["oic.r.iaszoneinfo"]
        },
        "minItems": 1,
        "readOnly": true,
        "type": "array"
      },
      "zonestate" : {
        "description": "The IAS zone state. True = enrolled, False = not enrolled.",
        "readOnly": true,
        "type": "boolean"
      },
      "zonestatus" : {
```

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```
          "description": "Set of alarm indicators.",
          "properties": {
            "alarms": {
              "type": "array",
              "description": "Array of alarms. The alarms exposed are dependent on the zonetype.",
              "readOnly": true,
              "minItems": 1,
              "maxItems": 2,
              "items": {
                "type": "string",
                "enum":
["system","intrusion","presence","1stportalopenclose","2ndportalopenclose","fire","wateroverflow","C
O","cooking","fall","emergencybutton","movement","vibration","panic","emergency","glassbreak"]
              }
            },
            "zonestatusreports": {
              "description": "Controls the generation of status indications",
              "type": "string",
              "enum": ["none","statuschangeonly","alarmclearonly","statuschangeandalarmclear"]
            },
            "tamper": {
              "description": "Tamper status. True = tampered, False = not tampered.",
              "readOnly": true,
              "type": "boolean"
            },
            "test": {
              "description": "Test mode indicator. True = sensor is in test mode, False = sensor is
in operational mode",
              "readOnly": true,
              "type": "boolean"
            },
            "fault": {
              "description": "Fault indicator. True = fault detected, False = no fault detected",
              "readOnly": true,
              "type": "boolean"
            }
          },
          "readOnly": true,
          "type": "object"
        },
        "numzonesensitivitylevel" : {
          "description": "Number of supported zone sensitivity levels",
          "minimum": 2,
          "readOnly": true,
          "type": "integer"
        },
        "zoneid" : {
          "description": "ID allocated by the IAS CIE",
          "readOnly": true,
          "type": "integer"
        },
        "iascieaddress" : {
          "description": "EUI-64 Address of the enrolled IAS Control and Indicating Equipment
(CIE)",
          "readOnly": true,
          "type": "string"
        },
        "zonetype" :  {
          "description": "IAS zone type. See OCF enumeration map for set of valid values.",
          "readOnly": true,
          "type": "string"
        },
        "currentzonesensitivitylevel" : {
          "description": "Current zone sensitivity level",
          "minimum": 0,
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```

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```
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" : {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
                     "maxItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
          "required": ["zonetype", "zonestate", "zonestatus", "zoneid", "iascieaddress"]
    },
    "IASZoneInfo-Update" : {
      "properties": {
        "currentzonesensitivitylevel" : {
          "description": "Current zone sensitivity level, Client can only set 1 or higher.",
          "minimum": 1,
          "type": "integer"
        }
      },
          "required": ["currentzonesensitivitylevel"]
    }
  }
}
```

7.124.5 Property definition

Table 256 defines the Properties that are part of the "oic.r.iaszoneinfo" Resource Type.

Table 256 – The Property definitions of the Resource with type "rt" = "oic.r.iaszoneinfo".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
zonestate	boolean	Yes	Read Only	The IAS zone state. True = enrolled, False = not enrolled.
zonestatus	object: see schema	Yes	Read Only	Set of alarm indicators.
numzonesensitivitylevel	integer	No	Read Only	Number of supported zone sensitivity levels
zoneid	integer	Yes	Read Only	ID allocated by the IAS CIE
iascieaddress	string	Yes	Read Only	EUI-64 Address of the enrolled IAS Control and Indicating Equipment (CIE)
zonetype	string	Yes	Read Only	IAS zone type. See OCF enumeration map for set of valid values.

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currentzonesensitivitylevel	integer	No	Read Write	Current zone sensitivity level
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
currentzonesensitivitylevel	integer	Yes	Read Write	Current zone sensitivity level, Client can only set 1 or higher.

7.124.6 CRUDN behaviour

Table 257 defines the CRUDN operations that are supported on the "oic.r.iaszoneinfo" Resource Type.

Table 257 – The CRUDN operations of the Resource with type "rt" = "oic.r.iaszoneinfo".

Create	Read	Update	Delete	Notify
	get	post		observe

7.125 IAS Zone Collection

7.125.1 Introduction

7.125.2 Example URI

/IASZoneCollectionResURI

7.125.3 Resource type

7.125.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "IAS Zone Collection",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/IASZoneResURI?if=oic.if.baseline" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System
(IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/baseline"},
```

```
            "x-example":
            {
              "rt": ["oic.r.iaszone"],
              "if": ["oic.if.ll","oic.if.b","oic.if.baseline"],
              "links": [
                {
                 "href": "/myIASZoneInfoResURI",
                 "rt":   ["oic.r.iaszoneinfo"],
                 "if":   ["oic.if.rw", "oic.if.baseline"]
                },
                {
                  "href": "/myBatteryResURI",
                  "rt":   ["oic.r.energy.battery"],
                  "if":   ["oic.if.rw", "oic.if.baseline"]
                },
                {
                  "href": "/myPowersourceResURI",
                  "rt":   ["oic.r.powersource"],
                  "if":   ["oic.if.r", "oic.if.baseline"]
                }
              ]
            }
          }
        }
      }
    },
    "/IASZoneResURI?if=oic.if.ll" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System
(IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-ll"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/links"},
            "x-example":
            [
              {
                "href": "/myIASZoneInfoResURI",
                "rt":   ["oic.r.iaszoneinfo"],
                "if":   ["oic.if.rw", "oic.if.baseline"]
              },
              {
                "href": "/myBatteryResURI",
                "rt":   ["oic.r.energy.battery"],
                "if":   ["oic.if.rw", "oic.if.baseline"]
              },
              {
                "href": "/myPowersourceResURI",
                "rt":   ["oic.r.powersource"],
                "if":   ["oic.if.r", "oic.if.baseline"]
              }
            ]
          }
        }
      }
    },
    "/IASZoneResURI?if=oic.if.b" : {
      "get": {
        "description": "This Resource is Collection that fully describes an Intruder Alert System
(IAS) Zone. It is made up of an instance of IAS Zone Info, Battery, and Power Source.",
        "parameters": [
          {"$ref": "#/parameters/interface-b"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "schema": { "$ref": "#/definitions/IASZoneCollectionBatch-Retrieve" },
            "x-example":
            [
```

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```
            {
              "href": "/myIASZoneInfoResURI",
              "rep": {
                "zonetype": "motionsensor",
                "zonestatus": {
                  "alarms": ["presence"],
                  "tamper": false,
                  "zonestatusreports": "statuschangeonly",
                  "fault": false,
                  "test": false
                },
                "iascieaddress": "ACDE9F56A3FE6B98",
                "zonestate": true,
                "zoneid": 64,
                "numzonesensitivitylevel": 3,
                "currentzonesensitivitylevel": 2
              }
            },
            {
              "href": "/myBatteryResURI",
              "rep": {
                "charge": 70,
                "defect": false
              }
            },
            {
              "href": "/myPowersourceResURI",
              "rep": {
                "powerSources": ["AC (Mains) Power"],
                "sourcefault": false
              }
            }
          ]
        }
      }
    },
    "post": {
      "description": "Sets the current sensitivity level of the IASZone.\n",
      "parameters": [
        {"$ref": "#/parameters/interface-b"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/IASZoneCollectionBatch-Update" },
          "x-example":
          [
            {
              "href": "/myIASZoneInfoResURI",
              "rep": {
                "currentzonesensitivitylevel": 3
              }
            }
          ]
        }
      ],
      "responses": {
        "200": {
          "description" : "Success path response code\n"
        }
      }
    }
  }
},
"parameters": {
  "interface-all" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.ll", "oic.if.b", "oic.if.baseline"]
  },
  "interface-ll" : {
```

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```
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.ll"]
    },
    "interface-b" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.b"]
    },
    "interface-baseline" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.baseline"]
    }
  },
  "definitions": {
    "baseline": {
      "properties": {
        "rt" :  {
          "description": "Resource Type",
          "items": {
            "type": "string",
            "enum": ["oic.r.iaszone"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "rts" : {
          "description": "Allowed Resources",
          "type": "array",
          "minItems": 3,
          "maxItems": 3,
          "items": {
            "type": "string",
            "enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
          }
        },
        "rts-m" : {
          "description": "Mandatory Resources",
          "type": "array",
          "minItems": 3,
          "maxItems": 3,
          "items": {
            "type": "string",
            "enum": ["oic.r.iaszoneinfo","oic.r.energy.battery","oic.r.powersource"]
          }
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links" :  {
          "$ref": "#/definitions/links"
        },
        "if" : {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.ll",
              "oic.if.b",
              "oic.if.baseline"
            ],
```

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```
            "type": "string"
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["links"]
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "description": "The OCF Interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rt": {
          "description": "Resource Type of the Resource",
          "items": {
            "enum": [
              "oic.r.iaszoneinfo",
              "oic.r.energy.battery",
              "oic.r.powersource"
            ],
            "type": "string"
          },
          "minItems": 1,
          "maxItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
```

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```
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    },
    "IASZoneCollectionBatch-Retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 3,
      "maxItems": 3,
      "type": "array",
      "uniqueItems": true,
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/IASZoneInfoResURI.swagger.json#/definiti
ons/IASZoneInfo"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BatteryResURI.swagger.json#/definitions/
Battery"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PowerSourcesResourceURI.swagger.json#/de
finitions/powerSourceSchema"
              }
            ]
          }
        },
        "required": ["href","rep"]
      }
    },
    "IASZoneCollectionBatch-Update" : {
      "title": "Collection Batch Update Format",
      "minItems": 1,
      "type": "array",
```

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```
      "items": {
        "additionalProperties": true,
        "type": "object",
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/IASZoneInfoResURI.swagger.json#/definiti
ons/IASZoneInfo-Update"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BatteryResURI.swagger.json#/definitions/
BatteryUpdate"
              }
            ]
          }
        }
      }
    }
  }
}
```

7.125.5 Property definition

Table 258 defines the Properties that are part of the "oic.r.iaszone" Resource Type.

Table 258 – The Property definitions of the Resource with type "rt" = "oic.r.iaszone".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
rts	array: see schema	No	Read Write	Allowed Resources
rts-m	array: see schema	No	Read Write	Mandatory Resources
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this resource
rt	array: see schema	Yes	Read Only	Resource Type of the Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	

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href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema		Read Write	
rep	object: see schema		Read Write	

7.125.6 CRUDN behaviour

Table 259 defines the CRUDN operations that are supported on the "oic.r.iaszone" Resource Type.

Table 259 – The CRUDN operations of the Resource with type "rt" = " oic.r.iaszone".

Create	Read	Update	Delete	Notify

7.126 Window Covering

7.126.1 Introduction

This Resource describes the information of a window covering, i.e., type, configuration status, and mode.
Velocity associated with lifting the window covering can be changed by updating Lift_Velocity(cm/sec).
Ramp up/down times to reaching the velocity setting can be changed by updating Lift_Acceleration Time/Lift_Deceleration Time (0.1sec).

7.126.2 Example URI

/WindowCoveringResURI

7.126.3 Resource type

The Resource Type is defined as: "oic.r.windowcovering".

7.126.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Window Covering",
    "version": "20190513",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
```

```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/WindowCoveringResURI" : {
      "get": {
        "description": "This Resource describes the information of a window covering, i.e., type,
configuration status, and mode.\nVelocity associated with lifting the window covering can be changed
by updating Lift_Velocity(cm/sec).\nRamp up/down times to reaching the velocity setting can be
changed by updating Lift_Acceleration Time/Lift_Deceleration Time (0.1sec).",
        "parameters": [
          {"$ref": "#/parameters/interface-all"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example":
            {
              "rt": ["oic.r.windowcovering"],
              "windowcoveringtype": "shutter",
              "configstatus": {
                "operational": true,
                "online": true,
                "rotationdirection": "normal",
                "controllift": "closedloop",
                "controltilt": "closedloop",
                "closedlooplіftcontrol": "encoder",
                "closedlooptiltcontrol": "encoder"
              },
              "mode": {
                "motordirection": false,
                "calibration": false,
                "maintenance": false,
                "ledfeedback": true
              },
              "liftvelocity": 5,
              "liftaccelerationtime": 200,
              "liftdecelerationtime": 200
            },
            "schema": { "$ref": "#/definitions/WindowCovering" }
          }
        }
      },
      "post": {
        "description": "Update window covering settings.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-all"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/WindowCovering-Update" },
            "x-example":
            {
              "mode": {
                "motordirection": true,
                "calibration": false,
                "maintenance": false,
                "ledfeedback": true
              },
              "liftvelocity": 10,
              "liftaccelerationtime": 500,
              "liftdecelerationtime": 500
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response code\n"
          }
```

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```
        }
      }
    }
  },
  "parameters": {
    "interface-all" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "WindowCovering" : {
      "properties": {
        "rt" : {
          "description": "Resource Type",
          "items": {
            "maxLength": 64,
            "type": "string",
            "enum": ["oic.r.windowcovering"]
          },
          "minItems": 1,
          "readOnly": true,
          "type": "array"
        },
        "windowcoveringtype" : {
          "description": "Window covering type. See OCF enumeration map for set of valid values.",
          "readOnly": true,
          "type": "string"
        },
        "liftvelocity" : {
          "description": "Velocity in cm/sec associated with lifting the covering",
          "type": "integer"
        },
        "configstatus" : {
          "description": "Set of config status indicators.",
          "properties": {
            "controllift": {
              "description": "Closed loop control allows for intermediate settings, open loop
supports only up or down",
              "readOnly": true,
              "type": "string",
              "enum": ["closedloop","openloop"]
            },
            "controltilt": {
              "description": "Closed loop control allows for intermediate settings, open loop
supports only tilted or not tilted",
              "readOnly": true,
              "type": "string",
              "enum": ["closedloop","openloop"]
            },
            "closedloopliftcontrol": {
              "description": "Encoder or timer controlled",
              "readOnly": true,
              "type": "string",
              "enum": ["encoder","timer"]
            },
            "closedlooptiltcontrol": {
              "description": "Encoder or timer controlled",
              "readOnly": true,
              "type": "string",
              "enum": ["encoder","timer"]
            },
            "online": {
              "description": "True = online, False = not online",
              "readOnly": true,
              "type": "boolean"
            },
            "operational": {
              "description": "True = operational, False = not operational",
              "readOnly": true,
```

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```
              "type": "boolean"
            },
            "rotationdirection": {
              "description": "Identifies if the direction of rotation has been reversed to match
physical installation.",
              "readOnly": true,
              "type": "string",
              "enum": ["normal","reversed"]
            }
          },
          "readOnly": true,
          "type": "object"
        },
        "liftaccelerationtime" : {
          "description": "Ramp up time to reach lift velocity (ms)",
          "type": "integer"
        },
        "liftdecelerationtime" : {
          "description": "Ramp down time from the velocity setting (ms)",
          "type": "integer"
        },
        "mode" : {
          "description": "Set of operational modes.",
          "properties": {
            "calibration": {
              "description": "True = calibration mode, False = normal mode",
              "type": "boolean"
            },
            "ledfeedback": {
              "description": "True = feedback enabled, False = LEDs are off",
              "type": "boolean"
            },
            "maintenance": {
              "description": "True = maintenance mode, False = normal mode",
              "type": "boolean"
            },
            "motordirection": {
              "description": "True = direction reversed, False = direction normal",
              "type": "boolean"
            }
          },
          "type": "object"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" : {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
                     "maxItems": 2,
          "readOnly": true,
          "type": "array"
        }
      },
      "required": ["windowcoveringtype", "configstatus", "mode"]
    },
    "WindowCovering-Update" : {
      "properties": {
```

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```
        "liftaccelerationtime" : {
          "description": "Ramp up time to reach lift velocity (ms)",
          "type": "integer"
        },
        "liftdecelerationtime" : {
          "description": "Ramp down time from the velocity setting (ms)",
          "type": "integer"
        },
        "liftvelocity" : {
          "description": "Velocity in cm/sec associated with lifting the covering",
          "type": "integer"
        },
        "mode" : {
          "description": "Set of operational modes.",
          "properties": {
            "calibration": {
              "description": "True = calibration mode, False = normal mode",
              "type": "boolean"
            },
            "ledfeedback": {
              "description": "True = feedback enabled, False = LEDs are off",
              "type": "boolean"
            },
            "maintenance": {
              "description": "True = maintenance mode, False = normal mode",
              "type": "boolean"
            },
            "motordirection": {
              "description": "True = direction reversed, False = direction normal",
              "type": "boolean"
            }
          },
          "type": "object"
        }
      },
      "required": ["mode"]
    }
  }
}
```

7.126.5 Property definition

Table 260 defines the Properties that are part of the "oic.r.windowcovering" Resource Type.

Table 260 – The Property definitions of the Resource with type "rt" = "oic.r.windowcovering".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	Resource Type
windowcoveringtype	string	Yes	Read Only	Window covering type. See OCF enumeration map for set of valid values.
liftvelocity	integer	No	Read Write	Velocity in cm/sec associated with lifting the covering
configstatus	object: see schema	Yes	Read Only	Set of config status indicators.
liftaccelerationtime	integer	No	Read Write	Ramp up time to reach lift velocity (ms)
liftdecelerationtime	integer	No	Read Write	Ramp down time from the velocity setting (ms)

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mode	object: see schema	Yes	Read Write	Set of operational modes.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The interface set supported by this resource
liftaccelerationtime	integer	No	Read Write	Ramp up time to reach lift velocity (ms)
liftdecelerationtime	integer	No	Read Write	Ramp down time from the velocity setting (ms)
liftvelocity	integer	No	Read Write	Velocity in cm/sec associated with lifting the covering
mode	object: see schema	Yes	Read Write	Set of operational modes.

7.126.6 CRUDN behaviour

Table 261 defines the CRUDN operations that are supported on the "oic.r.windowcovering" Resource Type.

Table 261 – The CRUDN operations of the Resource with type "rt" = "oic.r.windowcovering".

Create	Read	Update	Delete	Notify
	get	post		observe

7.127 Activity

7.127.1 Introduction

This Resource describes the Properties associated with a person's physical activity.
All Properties are read-only values that are provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.127.2 Example URI

/ActivityResURI

7.127.3 Resource type

The Resource Type is defined as: "oic.r.activity".

7.127.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Activity",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
```

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```
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ActivityResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's physical
activity.\n All Properties are read-only values that are provided by the server.\n When range (from
\"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.activity"
              ],
              "activity":     "sleep",
              "steps_day":    1000,
              "steps_reset":  500,
              "ccal_day":     3000.0,
              "ccal_reset":   1500.0
            },
            "schema": {
              "$ref": "#/definitions/Activity"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Activity": {
      "properties": {
        "activity":    {
          "description": "This Property describes the recognized current activity type of user",
          "type": "string",
          "enum": [
            "sleep",
            "sit",
            "stand",
            "walk",
            "run",
            "unknown"
          ],
          "readOnly": true
        },
        "steps_day": {
          "description": "This Property describes the user's step count that measures the number of
steps the user has taken since the beginning of the day.",
          "type": "integer",
```

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```
          "minimum": 0,
          "readOnly": true
        },
        "steps_reset": {
          "description": "This Property describes the user's step count that measures the number of
steps the user has taken since the last reset.",
          "type": "integer",
          "minimum": 0,
          "readOnly": true
        },
        "ccal_day": {
          "description": "This Property describes the burned off calories of user since the
beginning of the day.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "ccal_reset": {
          "description": "This Property describes the burned off calories of user since the last
reset.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.activity"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s", "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "steps_day_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "steps_day_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "steps_reset_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "steps_reset_step": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "ccal_day_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "ccal_day_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "ccal_day_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "ccal_reset_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "ccal_reset_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "ccal_reset_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "activity"
      ]
    }
  }
}
```

7.127.5 Property definition

Table 262 defines the Properties that are part of the "oic.r.activity" Resource Type.

Table 262 – The Property definitions of the Resource with type "rt" = "oic.r.activity".

Property name	Value type	Mandatory	Access mode	Description
activity	string	Yes	Read Only	This Property describes the recognized current activity type of user
steps_day	integer	No	Read Only	This Property describes the user's step count that measures the number of steps the user has taken since the beginning of the day.
steps_reset	integer	No	Read Only	This Property describes the user's step count that measures the number of steps the user has taken since the last reset.

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ccal_day	number	No	Read Only	This Property describes the burned off calories of user since the beginning of the day.
ccal_reset	number	No	Read Only	This Property describes the burned off calories of user since the last reset.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
steps_day_range	multiple types: see schema	No	Read Write	
steps_day_step	multiple types: see schema	No	Read Write	
steps_reset_range	multiple types: see schema	No	Read Write	
steps_reset_step	multiple types: see schema	No	Read Write	
ccal_day_range	multiple types: see schema	No	Read Write	
ccal_day_step	multiple types: see schema	No	Read Write	
ccal_day_precision	multiple types: see schema	No	Read Write	
ccal_reset_range	multiple types: see schema	No	Read Write	
ccal_reset_step	multiple types: see schema	No	Read Write	
ccal_reset_precision	multiple types: see schema	No	Read Write	

7.127.6 CRUDN behaviour

Table 263 defines the CRUDN operations that are supported on the "oic.r.activity" Resource Type.

Table 263 – The CRUDN operations of the Resource with type "rt" = "oic.r.activity".

Create	Read	Update	Delete	Notify
	get			observe

7.128 Activity Tracker Atomic Measurement Representation

7.128.1 Introduction

This Resource describes the Properties associated with Activity Tracker.
The Resource is an Atomic Measurement of activity ("oic.r.activity"), heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

7.128.2 Example URI

/ActivityTrackerAMResURI

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7.128.3 Resource type

The Resource Type is defined as: "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

7.128.4 OpenAPI 2.0 definition

```
{
    "swagger": "2.0",
    "info": {
      "title": "Activity Tracker Atomic Measurement Representation",
      "version": "2019-03-04",
      "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
      "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
    },
    "schemes": [
      "http"
    ],
    "consumes": [
      "application/json"
    ],
    "produces": [
      "application/json"
    ],
    "paths": {
      "/ActivityTrackerAMResURI?if=oic.if.b": {
        "get": {
          "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
          "parameters": [
            {
              "$ref": "#/parameters/interface-all"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example": [
                {
                  "href": "/myActivity",
                  "rep": {
                    "activity":     "sleep",
                    "steps_day":    1000,
                    "steps_reset":  500,
                    "ccal_day":     3000.0,
                    "ccal_reset":   1500.0
                  }
                },
                {
                  "href": "/myHeartRate",
                  "rep": {
                    "heartrate": 80
                  }
                },
                {
                  "href": "/myUserId",
                  "rep": {
                    "userid": "USER1"
                  }
                },
                {
                  "href": "/myTimeStamp",
                  "rep": {
                    "timestamp": "2018-11-09T12:15:00+08:00"
                  }
                }
```

```
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/ActivityTrackerAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myActivity",
                "rt": [
                  "oic.r.activity"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myHeartRate",
                "rt": [
                  "oic.r.heartrate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/ActivityTrackerAMResURI?if=oic.if.baseline": {
      "get": {
```

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```
          "description": "This Resource describes the Properties associated with Activity Tracker.\n
The Resource is an Atomic Measurement of activity (\"oic.r.activity\"), heart rate
(\"oic.r.heartrate\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
          "parameters": [
            {
              "$ref": "#/parameters/interface-all"
            }
          ],
          "responses": {
            "200": {
              "description": "",
              "x-example":
                {
                  "rt": [
                    "oic.r.activitytracker-am",
                    "oic.wk.atomicmeasurement"
                  ],
                  "if": [
                    "oic.if.b",
                    "oic.if.ll",
                    "oic.if.baseline"
                  ],
                  "rts-m": [
                    "oic.r.activity"
                  ],
                  "rts": [
                    "oic.r.activity", "oic.r.heartrate", "oic.r.userid", "oic.r.time.stamp"
                  ],
                  "links": [
                    {
                      "href": "/myActivity",
                      "rt": [
                        "oic.r.activity"
                      ],
                      "if": [
                        "oic.if.s",
                        "oic.if.baseline"
                      ]
                    },
                    {
                      "href": "/myHeartRate",
                      "rt": [
                        "oic.r.heartrate"
                      ],
                      "if": [
                        "oic.if.s",
                        "oic.if.baseline"
                      ]
                    },
                    {
                      "href": "/myUserId",
                      "rt": [
                        "oic.r.userid"
                      ],
                      "if": [
                        "oic.if.r",
                        "oic.if.baseline"
                      ]
                    },
                    {
                      "href": "/myTimeStamp",
                      "rt": [
                        "oic.r.time.stamp"
                      ],
                      "if": [
                        "oic.if.r",
                        "oic.if.baseline"
                      ]
                    }
                  ]
                },
              "schema": {
```

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```
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
    },
    "parameters": {
      "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
    },
    "definitions": {
      "batch-retrieve": {
        "title": "Collection Batch Retrieve Format",
        "minItems": 1,
        "items": {
          "additionalProperties": true,
          "properties": {
            "href": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
            },
            "rep": {
              "type": "object",
              "anyOf": [
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/Activity.swagger.json#/definitions/Activ
ity"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/Hear
tRate"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
                }
              ]
            }
          },
          "required": [
            "href",
            "rep"
          ],
          "type": "object"
        },
        "type": "array"
      },
      "links": {
        "type": "array",
        "items": {
          "$ref": "#/definitions/oic.oic-link"
        }
      },
      "baseline": {
```

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```
        "properties": {
          "rt": {
            "items": {
              "enum": [
                "oic.r.activitytracker-am",
                "oic.wk.atomicmeasurement"
              ]
            },
            "minItems": 2,
            "type": "array",
            "uniqueItems": true,
            "readOnly": true
          },
          "links": {
            "$ref": "#/definitions/links"
          },
          "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "rts": {
            "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
            "items": {
              "enum": [
                "oic.r.activity",
                "oic.r.heartrate",
                "oic.r.time.stamp",
                "oic.r.userid"
              ]
            },
            "minItems": 1,
            "type": "array",
            "uniqueItems": true
          },
          "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "rts-m": {
            "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
            "items": {
              "enum": [
                "oic.r.activity"
              ]
            },
            "maxItems": 1,
            "minItems": 1,
            "type": "array",
            "readOnly": true,
            "uniqueItems": true
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.baseline",
                "oic.if.ll",
                "oic.if.b"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
```

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```
        "required": [
          "rts-m"
        ]
      },
      "oic.oic-link": {
        "properties": {
          "anchor": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
          },
          "di": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
          },
          "eps": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
          },
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.baseline",
                "oic.if.s",
                "oic.if.r"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "type": "array"
          },
          "ins": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
          },
          "p": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
          },
          "rel": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
          },
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": [
                "oic.r.activity",
                "oic.r.heartrate",
                "oic.r.time.stamp",
                "oic.r.userid"
              ],
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "title": {
```

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```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
          },
          "type": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
          }
        },
        "required": [
          "href",
          "rt",
          "if"
        ],
        "type": "object"
      }
    }
  }
```

7.128.5 Property definition

Table 264 defines the Properties that are part of the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

Table 264 – The Property definitions of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
id	multiple types: see schema	No	Read Write	
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	

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if	array: see schema	Yes	Read Write	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.128.6 CRUDN behaviour

Table 265 defines the CRUDN operations that are supported on the "oic.r.activitytracker-am, oic.wk.atomicmeasurement" Resource Type.

Table 265 – The CRUDN operations of the Resource with type "rt" = "oic.r.activitytracker-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.129 Alarm

7.129.1 Introduction

This Resource describes the Properties associated with alarm status.

7.129.2 Example URI

/AlarmResURI

7.129.3 Resource type

The Resource Type is defined as: "oic.r.alarm".

7.129.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Alarm",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LICENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
```

```
"paths": {
  "/AlarmResURI": {
    "get": {
      "description": "This Resource describes the Properties associated with alarm status.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [ "oic.r.alarm" ],
            "if": [ "oic.if.rw", "oic.if.baseline"],
            "status":   false,
            "duration": 0.0,
            "time":     "2018-06-20T14:30Z",
            "alarmtype": "General"
          },
          "schema": {
            "$ref": "#/definitions/Alarm"
          }
        }
      }
    },
    "post": {
      "description": "This Resource describes the Properties associated with alarm status.",
      "parameters": [
        {
          "$ref": "#/parameters/interface"
        },
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/Alarm" },
          "x-example": {
            "status":   true,
            "duration": 30.0,
            "time":     "2019-01-31T14:30Z"
          }
        }

      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": {
            "rt": [
              "oic.r.alarm"
            ],
            "status":     true,
            "duration":   30.0,
            "time":       "2019-01-31T14:30Z",
            "alarmtype":  "General"
          },
          "schema": {
            "$ref": "#/definitions/Alarm"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.rw",
```

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```
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Alarm": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.alarm"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "This Property describes the status of the alarm: true - on, false - off.",
          "type": "boolean",
          "readOnly": false
        },
        "duration": {
          "description": "This Property describes the alarm duration (seconds).",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "time": {
          "description": "This Property describes the alarm time using ISO 8601 datetime format
(e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00).",
          "type": "string",
          "readOnly": false
        },
        "alarmtype": {
          "description": "The Alarm Type.",
          "type": "string",
          "enum": [
            "General",
            "Fire",
            "Flood",
            "Weather",
            "Security"
          ],
          "readOnly": true
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "status"
      ]
    }
  }
}
```

7.129.5 Property definition

Table 266 defines the Properties that are part of the "oic.r.alarm" Resource Type.

Table 266 – The Property definitions of the Resource with type "rt" = "oic.r.alarm".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
status	boolean	Yes	Read Write	This Property describes the status of the alarm: true - on, false - off.
duration	number	No	Read Write	This Property describes the alarm duration (seconds).
time	string	No	Read Write	This Property describes the alarm time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00).
alarmtype	string	No	Read Only	The Alarm Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

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7.129.6 CRUDN behaviour

Table 267 defines the CRUDN operations that are supported on the "oic.r.alarm" Resource Type.

Table 267 – The CRUDN operations of the Resource with type "rt" = "oic.r.alarm".

Create	Read	Update	Delete	Notify
	get	post		observe

7.130 Continuous Glucose Meter (CGM) Atomic Measurement Representation

7.130.1 Introduction

This Resource describes the Properties associated with Continuous Glucose Meter. The Resource is an Atomic Measurement of glucose ("oic.r.glucose"), sensor ("oic.r.cgm.sensor"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

7.130.2 Example URI

/ContinuousGlucoseMeterAMResURI

7.130.3 Resource type

The Resource Type is defined as: "oic.r.cgm-am, oic.wk.atomicmeasurement".

7.130.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Continuous Glucose Meter (CGM) Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myGlucose",
                "rep": {
                  "glucose": 100.0,
                  "units": "mg/dL"
```

```
              }
            },
            {
              "href": "/myContinuousGlucoseMeterSensor",
              "rep": {
                "starttime": "2018-06-20T14:30Z",
                "runtime": 7.0
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15:00+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/ContinuousGlucoseMeterAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
      "parameters": [
        {
            "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myGlucose",
              "rt": [
                "oic.r.glucose"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myContinuousGlucoseMeterSensor",
              "rt": [
                "oic.r.cgm.sensor"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
```

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```
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/ContinuousGlucoseMeterAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with Continuous Glucose
Meter.\n The Resource is an Atomic Measurement of glucose (\"oic.r.glucose\"), sensor
(\"oic.r.cgm.sensor\"), observed time (\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example":
            {
              "rt": [
                "oic.r.cgm-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.glucose"
              ],
              "rts": [
                "oic.r.glucose", "oic.r.cgm.sensor"
              ],
              "links": [
                {
                  "href": "/myGlucose",
                  "rt": [
                    "oic.r.glucose"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myContinuousGlucoseMeterSensor",
                  "rt": [
                    "oic.r.cgm.sensor"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
```

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```
                    "rt": [
                      "oic.r.userid"
                    ],
                    "if": [
                      "oic.if.r",
                      "oic.if.baseline"
                    ]
                  },
                  {
                    "href": "/myTimeStamp",
                    "rt": [
                      "oic.r.time.stamp"
                    ],
                    "if": [
                      "oic.if.r",
                      "oic.if.baseline"
                    ]
                  }
                ]
              },
              "schema": {
                "$ref": "#/definitions/baseline"
              }
            }
          }
        }
      }
    },
    "parameters": {
      "interface-all": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": [
          "oic.if.b",
          "oic.if.ll",
          "oic.if.baseline"
        ]
      }
    },
    "definitions": {
      "batch-retrieve": {
        "title": "Collection Batch Retrieve Format",
        "minItems": 1,
        "items": {
          "properties": {
            "href": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
            },
            "rep": {
              "type": "object",
              "anyOf": [
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GlucoseResURI.swagger.json#/definitions/
Glucose"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/ContinuousGlucoseMeterSensor.swagger.jso
n#/definitions/ContinuousGlucoseMeterSensor"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
```

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```
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.cgm-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.cgm.sensor",
              "oic.r.time.stamp",
              "oic.r.userid"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.glucose"
            ]
          },
          "maxItems": 1,
          "minItems": 1,
          "type": "array",
```

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```
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.ll",
              "oic.if.b"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "type": "array"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.glucose",
              "oic.r.cgm.sensor",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.130.5 Property definition

Table 268 defines the Properties that are part of the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

Table 268 – The Property definitions of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
id	multiple types: see schema	No	Read Write	

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rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Write	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.130.6 CRUDN behaviour

Table 269 defines the CRUDN operations that are supported on the "oic.r.cgm-am, oic.wk.atomicmeasurement" Resource Type.

Table 269 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.131 Calibrate for Continuous Glucose Meter (CGM)

7.131.1 Introduction

This Resource describes the Properties associated with Calibrate for Continuous Glucose Meter (CGM).

7.131.2 Example URI

/ContinuousGlucoseMeterCalibrateResURI

7.131.3 Resource type

The Resource Type is defined as: "oic.r.cgm.calibrate".

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7.131.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Calibrate for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterCalibrateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Calibrate for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.calibrate"
              ],
              "Cvalue": 128.0,
              "Cstatus": true
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Calibrate for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate" },
            "x-example": {
              "Cvalue": 130.0,
              "Cstatus": true
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
```

```
            "x-example": {
              "rt": [
                "oic.r.cgm.calibrate"
              ],
              "Cvalue": 130.0,
              "Cstatus": true
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterCalibrate"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.rw",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterCalibrate": {
      "properties": {
        "Cvalue": {
          "description": "This Property describes the Sensor Calibration Value in mg/dL units. This
blood glucose measurement using other external glucose meter.",
          "type": "number",
          "minimum": 0,
          "readOnly": false
        },
        "Cstatus": {
          "description": "Sensor calibration required flag",
          "type": "boolean",
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.calibrate"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "Cvalue", "Cstatus"
      ]
    }
  }
}
```

7.131.5 Property definition

Table 270 defines the Properties that are part of the "oic.r.cgm.calibrate" Resource Type.

Table 270 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.calibrate".

Property name	Value type	Mandatory	Access mode	Description
Cvalue	number	Yes	Read Write	This Property describes the Sensor Calibration Value in mg/dL units. This blood glucose measurement using other external glucose meter.
Cstatus	boolean	Yes	Read Only	Sensor calibration required flag
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.131.6 CRUDN behaviour

Table 271 defines the CRUDN operations that are supported on the "oic.r.cgm.calibrate" Resource Type.

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Table 271 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.calibrate".

Create	Read	Update	Delete	Notify
	get	post		observe

7.132 Sampling Interval for Continuous Glucose Meter (CGM)

7.132.1 Introduction

This Resource describes the Properties associated with Sampling Interval for Continuous Glucose Meter (CGM).

7.132.2 Example URI

/ContinuousGlucoseMeterSamplingIntervalResURI

7.132.3 Resource type

The Resource Type is defined as: "oic.r.cgm.samplinginterval".

7.132.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sampling Interval for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterSamplingIntervalResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sampling Interval for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.samplinginterval"
              ],
              "interval": 10.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval"
            }
          }
        }
      },
```

```
      "post": {
        "description": "This Resource describes the Properties associated with Sampling Interval for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval" },
            "x-example": {
              "interval": 20.0
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.samplinginterval"
              ],
              "interval": 20.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSamplingInterval"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.a",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterSamplingInterval": {
      "properties": {
        "interval": {
          "description": "This Property describes the Sampling interval in seconds.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.samplinginterval"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```

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```
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "interval"
      ]
    }
  }
}
```


7.132.5 Property definition

Table 272 defines the Properties that are part of the "oic.r.cgm.samplinginterval" Resource Type.

Table 272 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.samplinginterval".

Property name	Value type	Mandatory	Access mode	Description
interval	number	Yes	Read Write	This Property describes the Sampling interval in seconds.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	

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step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.132.6 CRUDN behaviour

Table 273 defines the CRUDN operations that are supported on the "oic.r.cgm.samplinginterval" Resource Type.

Table 273 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.samplinginterval".

Create	Read	Update	Delete	Notify
	get	post		observe

7.133 Sensor for Continuous Glucose Meter (CGM)

7.133.1 Introduction

This Resource describes the Properties associated with Sensor for Continuous Glucose Meter (CGM).

7.133.2 Example URI

/ContinuousGlucoseMeterSensorResURI

7.133.3 Resource type

The Resource Type is defined as: "oic.r.cgm.sensor".

7.133.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sensor for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterSensorResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sensor for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
```

```
            "x-example": {
              "rt": [
                "oic.r.cgm.sensor"
              ],
              "starttime": "2018-06-20T14:30Z",
              "runtime": 7.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterSensor"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterSensor": {
      "properties": {
        "starttime": {
          "description": "This Property describes the Sensor start time using ISO 8601 datetime
format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)",
          "type": "string",
          "readOnly": true
        },
        "runtime": {
          "description": "This Property describes the recommended runtime days using CGM",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.sensor"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "starttime", "runtime"
      ]
    }
  }
}
```

7.133.5 Property definition

Table 274 defines the Properties that are part of the "oic.r.cgm.sensor" Resource Type.

Table 274 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.sensor".

Property name	Value type	Mandatory	Access mode	Description
starttime	string	Yes	Read Only	This Property describes the Sensor start time using ISO 8601 datetime format (e.g: 2007-04-05T14:30Z, 2007-04-05T14:30+09:00)
runtime	number	Yes	Read Only	This Property describes the recommended runtime days using CGM
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.133.6 CRUDN behaviour

Table 275 defines the CRUDN operations that are supported on the "oic.r.cgm.sensor" Resource Type.

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Table 275 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.sensor".

Create	Read	Update	Delete	Notify
	get			observe

7.134 Status for Continuous Glucose Meter (CGM)

7.134.1 Introduction

This Resource describes the Properties associated with Status for Continuous Glucose Meter (CGM).

7.134.2 Example URI

/ContinuousGlucoseMeterStatusResURI

7.134.3 Resource type

The Resource Type is defined as: "oic.r.cgm.status".

7.134.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Status for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterStatusResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Status for Continuous
Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.status"
              ],
              "cgmtype": "Interstitial Fluid",
              "cgmstatus": "working",
              "gtrend": 100.0,
              "malfunction": false
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterStatus"
            }
```

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```
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterStatus": {
      "properties": {
        "cgmtype": {
          "description": "This Property describes the CGM measurement type.",
          "type": "string",
          "enum": [
            "Capillary Whole blood",
            "Capillary Plasma",
            "Venous Plasma",
            "Arterial Whole blood",
            "Arterial Plasma",
            "Undetermined Whole blood",
            "Undetermined Plasma",
            "Interstitial Fluid"
          ],
          "readOnly": true
        },
        "cgmstatus": {
          "description": "This Property describes the specific notifications given by the CGM device
including, but not limited to, warnings, errors, and handling events.",
          "type": "string",
          "readOnly": true
        },
        "gtrend": {
          "description": "This Property describes the rate of change in glucose measurements at a
time instant.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "malfunction": {
          "description": "This Property describes the sensor malfunction detection check.",
          "type": "boolean",
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.status"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
```

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```
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "cgmtype",
        "cgmstatus",
        "gtrend",
        "malfunction"
      ]
    }
  }
}
```

7.134.5 Property definition

Table 276 defines the Properties that are part of the "oic.r.cgm.status" Resource Type.

Table 276 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.status".

Property name	Value type	Mandatory	Access mode	Description
cgmtype	string	Yes	Read Only	This Property describes the CGM measurement type.
cgmstatus	string	Yes	Read Only	This Property describes the specific notifications given by the CGM device including, but not limited to, warnings, errors, and handling events.
gtrend	number	Yes	Read Only	This Property describes the rate of change in glucose measurements at a time instant.
malfunction	boolean	Yes	Read Only	This Property describes the sensor malfunction detection check.
rt	array: see schema	No	Read Only	The Resource Type.

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n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.134.6 CRUDN behaviour

Table 277 defines the CRUDN operations that are supported on the "oic.r.cgm.status" Resource Type.

Table 277 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.status".

Create	Read	Update	Delete	Notify
	get			observe

7.135 Threshold for Continuous Glucose Meter (CGM)

7.135.1 Introduction

This Resource describes the Properties associated with Threshold for Continuous Glucose Meter (CGM).

7.135.2 Example URI

/ContinuousGlucoseMeterThresholdResURI

7.135.3 Resource type

The Resource Type is defined as: "oic.r.cgm.threshold".

7.135.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Threshold for Continuous Glucose Meter (CGM)",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/ContinuousGlucoseMeterThresholdResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Threshold for
Continuous Glucose Meter (CGM).",
```

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```
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.threshold"
              ],
              "plow": 100.0,
              "phigh": 180.0,
              "dhypo": 80.0,
              "dhyper": 125.0,
              "gir": 5.0,
              "gdr": 5.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterThreshold"
            }
          }
        }
      },
      "post": {
        "description": "This Resource describes the Properties associated with Threshold for
Continuous Glucose Meter (CGM).",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          },
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/ContinuousGlucoseMeterThreshold" },
            "x-example": {
              "plow": 70.0,
              "phigh": 150.0,
              "dhypo": 60.0,
              "dhyper": 90.0,
              "gir": 3.0,
              "gdr": 3.0
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cgm.threshold"
              ],
              "plow": 70.0,
              "phigh": 150.0,
              "dhypo": 60.0,
              "dhyper": 90.0,
              "gir": 3.0,
              "gdr": 3.0
            },
            "schema": {
              "$ref": "#/definitions/ContinuousGlucoseMeterThreshold"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
```

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```
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.rw",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "ContinuousGlucoseMeterThreshold": {
      "properties": {
        "plow": {
          "description": "This Property describes the Patient low threshold (mg/dL)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "phigh": {
          "description": "This Property describes the Patient high threshold (mg/dL)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "dhypo": {
          "description": "This Property describes the Device hypoglycemia threshold (mg/dL)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "dhyper": {
          "description": "This Property describes the Device hyperglycemia threshold (mg/dL)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "gir": {
          "description": "This Property describes the Glucose Increase rate of change threshold
(%)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "gdr": {
          "description": "This Property describes the Glucose DecreaseÂ rate of change threshold
(%)",
          "type": "number",
          "minimum": 0.0,
          "readOnly": false
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cgm.threshold"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
```

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```
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "plow",
        "phigh",
        "dhypo",
        "dhyper",
        "gir",
        "gdr"
      ]
    }
  }
}
```

7.135.5 Property definition

Table 278 defines the Properties that are part of the "oic.r.cgm.threshold" Resource Type.

Table 278 – The Property definitions of the Resource with type "rt" = "oic.r.cgm.threshold".

Property name	Value type	Mandatory	Access mode	Description
plow	number	Yes	Read Write	This Property describes the Patient low threshold (mg/dL)
phigh	number	Yes	Read Write	This Property describes the Patient high threshold (mg/dL)
dhypo	number	Yes	Read Write	This Property describes the Device hypoglycemia threshold (mg/dL)
dhyper	number	Yes	Read Write	This Property describes the Device hyperglycemia threshold (mg/dL)
gir	number	Yes	Read Write	This Property describes the Glucose Increase rate of change threshold (%)
gdr	number	Yes	Read Write	

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rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.135.6 CRUDN behaviour

Table 279 defines the CRUDN operations that are supported on the "oic.r.cgm.threshold" Resource Type.

Table 279 – The CRUDN operations of the Resource with type "rt" = "oic.r.cgm.threshold".

Create	Read	Update	Delete	Notify
	get	post		observe

7.136 Heart Rate

7.136.1 Introduction

This Resource describes the Properties associated with a person's heart rate.
The unit, which is the default unit, is bpm.
The heartrate Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.136.2 Example URI

/HeartRateResURI

7.136.3 Resource type

The Resource Type is defined as: "oic.r.heartrate".

7.136.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
```

```
  "paths": {
    "/HeartRateResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's heart
rate.\n The unit, which is the default unit, is bpm.\n The heartrate Property is a read-only value
that is provided by the server.\n When range (from \"oic.r.baseresource\") is omitted the default is
0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.heartrate"
              ],
              "heartrate": 80
            },
            "schema": {
              "$ref": "#/definitions/HeartRate"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "HeartRate": {
      "properties": {
        "heartrate": {
          "description": "This Property describes the heart rate in bpm.",
          "type": "integer",
          "minimum": 0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.heartrate"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
```

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```
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        }
      },
      "type": "object",
      "required": [
        "heartrate"
      ]
    }
  }
}
```

7.136.5 Property definition

Table 280 defines the Properties that are part of the "oic.r.heartrate" Resource Type.

Table 280 – The Property definitions of the Resource with type "rt" = "oic.r.heartrate".

Property name	Value type	Mandatory	Access mode	Description
heartrate	integer	Yes	Read Only	This Property describes the heart rate in bpm.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

7.136.6 CRUDN behaviour

Table 281 defines the CRUDN operations that are supported on the "oic.r.heartrate" Resource Type.

Table 281 – The CRUDN operations of the Resource with type "rt" = "oic.r.heartrate".

Create	Read	Update	Delete	Notify
	get			observe

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7.137 Heart Rate Monitor Atomic Measurement Representation

7.137.1 Introduction

This Resource describes the Properties associated with Heart Rate Monitor.
The Resource is an Atomic Measurement of heart rate ("oic.r.heartrate"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

7.137.2 Example URI

/HeartRateMonitorAMResURI

7.137.3 Resource type

The Resource Type is defined as: "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

7.137.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Heart Rate Monitor Atomic Measurement Representation",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/HeartRateMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myHeartrate",
                "rep": {
                  "heartrate": 80
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15:00+08:00"
```

```
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/HeartRateMonitorAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/myHeartrate",
              "rt": [
                "oic.r.heartrate"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/HeartRateMonitorAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with Heart Rate Monitor.\n
The Resource is an Atomic Measurement of heart rate (\"oic.r.heartrate\"), observed time
(\"oic.r.time.stamp\"), and user ID (\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
```

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```
      "responses": {
        "200": {
          "description": "",
          "x-example":
            {
              "rt": [
                "oic.r.heartratemonitor-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.heartrate"
              ],
              "rts": [
                "oic.r.heartrate",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "links": [
                {
                  "href": "/myHeartRateMonitor",
                  "rt": [
                    "oic.r.heartrate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            }
          ,
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
```

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```
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "title": "Collection Batch Retrieve Format",
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/Hear
tRate"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.heartratemonitor-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
```

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```
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.heartrate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.heartrate"
            ]
          },
          "maxItems": 1,
          "minItems": 1,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
```

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```
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.heartrate",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.137.5 Property definition

Table 282 defines the Properties that are part of the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

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Table 282 – The Property definitions of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Only	This Property contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource.
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.137.6 CRUDN behaviour

Table 283 defines the CRUDN operations that are supported on the "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement" Resource Type.

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Table 283 – The CRUDN operations of the Resource with type "rt" = "oic.r.heartratemonitor-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.138 Pulsatile Characteristic for Pulse Oximeter

7.138.1 Introduction

This Resource describes the Properties associated with a pulsatile characteristic of the pulsative wave of a Pulse Oximeter.
The characteristic Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.138.2 Example URI

/PulsatileCharacteristicResURI

7.138.3 Resource type

The Resource Type is defined as: "oic.r.pulsatilecharacteristic".

7.138.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulsatile Characteristic for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulsatileCharacteristicResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a pulsatile
characteristic of the pulsative wave of a Pulse Oximeter.\n The characteristic Property is a read-
only value that is provided by the server.\n When range (from \"oic.r.baseresource\") is omitted the
default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulsatilecharacteristic"
              ],
              "characteristic": 1
            },
            "schema": {
```

```
              "$ref": "#/definitions/pulsatilecharacteristic"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "pulsatilecharacteristic": {
      "properties": {
        "characteristic": {
          "description": "This Property describes the current pulsatile characteristic measurement.
The value is an integer bit mapped value. The following describes what each integer means. 0 -
Quality of the detected pulse is nominal, in that there are no recognized abnormalities in the
detected pulse. 1 - Perfusion or quality of the detected pulse is marginal. 2 - Perfusion or quality
of the detected pulse is minimal. 3 - Perfusion or quality of the detected pulse is unacceptable.",
          "type": "integer",
          "minimum": 0,
          "maximum": 3,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.pulsatilecharacteristic"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
```

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```
schema.json#/definitions/step_integer"
        }
      },
      "type": "object",
      "required": [
        "characteristic"
      ]
    }
  }
}
```

7.138.5 Property definition

Table 284 defines the Properties that are part of the "oic.r.pulsatilecharacteristic" Resource Type.

Table 284 – The Property definitions of the Resource with type "rt" = "oic.r.pulsatilecharacteristic".

Property name	Value type	Mandatory	Access mode	Description
characteristic	integer	Yes	Read Only	This Property describes the current pulsatile characteristic measurement. The value is an integer bit mapped value. The following describes what each integer means. 0 - Quality of the detected pulse is nominal, in that there are no recognized abnormalities in the detected pulse. 1 - Perfusion or quality of the detected pulse is marginal. 2 - Perfusion or quality of the detected pulse is minimal. 3 - Perfusion or quality of the detected pulse is unacceptable.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

7.138.6 CRUDN behaviour

Table 285 defines the CRUDN operations that are supported on the "oic.r.pulsatilecharacteristic" Resource Type.

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Table 285 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatilecharacteristic".

Create	Read	Update	Delete	Notify
	get			observe

7.139 Pulsatile Occurrence for Pulse Oximeter

7.139.1 Introduction

This Resource describes the Properties associated with a Pulsatile Occurrence detected by a Pulse Oximeter.
The occurrence Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.139.2 Example URI

/PulsatileOccurrenceResURI

7.139.3 Resource type

The Resource Type is defined as: "oic.r.pulsatileoccurrence".

7.139.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulsatile Occurrence for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulsatileOccurrenceResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a Pulsatile
Occurrence detected by a Pulse Oximeter.\n The occurrence Property is a read-only value that is
provided by the server.\n When range (from \"oic.r.baseresource\") is omitted the default is 0 to
+MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.pulsatileoccurrence"
              ],
              "occurrence": "BEAT"
            },
            "schema": {
```

```
              "$ref": "#/definitions/pulsatileoccurrence"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "pulsatileoccurrence": {
      "properties": {
        "occurrence": {
          "type": "string",
          "readOnly": true,
          "enum": [
            "BEAT",
            "BEAT_MAX_INRUSH",
            "NOS"
          ],
          "description": "This Property describes the Pulsatile Occurrence detected by a Pulse
Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the
pulsatile wave has occurred. NOS - No pulsatile event occurred.",
          "default": "NOS"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.pulsatileoccurrence"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "occurrence"
      ]
    }
```

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```
  }
}
```

7.139.5 Property definition

Table 286 defines the Properties that are part of the "oic.r.pulsatileoccurrence" Resource Type.

Table 286 – The Property definitions of the Resource with type "rt" = "oic.r.pulsatileoccurrence".

Property name	Value type	Mandatory	Access mode	Description
occurrence	string	Yes	Read Only	This Property describes the Pulsatile Occurrence detected by a Pulse Oximeter. BEAT - Pulsatile occurrence has occurred. BEAT_MAX_INRUSH - Maximal inrush of the pulsatile wave has occurred. NOS - No pulsatile event occurred.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.139.6 CRUDN behaviour

Table 287 defines the CRUDN operations that are supported on the "oic.r.pulsatileoccurrence" Resource Type.

Table 287 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulsatileoccurrence".

Create	Read	Update	Delete	Notify
	get			observe

7.140 Pulse Oximeter Atomic Measurement Representation

7.140.1 Introduction

This Resource describes the Properties associated with Pulse Oximeter.
The Resource is an Atomic Measurement of SpO2 ("oic.r.spo2"), pulse rate ("oic.r.pulserate"), pulsatile characteristic ("oic.r.pulsatilecharacteristic"), pulsatileoccurrence ("oic.r.pulsatileoccurrence"), observed time ("oic.r.time.stamp"), and user ID ("oic.r.userid").

7.140.2 Example URI

/PulseOximeterAMResURI

7.140.3 Resource type

The Resource Type is defined as: "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

7.140.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Pulse Oximeter Atomic Measurement Representation",
```

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```
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/PulseOximeterAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"),
pulsatile characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
        "parameters": [
          {
              "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/mySpO2",
                "rep": {
                  "spo2": 99.0,
                  "perfusion": 20.0
                }
              },
              {
                "href": "/myPulseRate",
                "rep": {
                  "pulserate": 80
                }
              },
              {
                "href": "/myPulsatileOccurrence",
                "rep": {
                  "occurrence": "BEAT"
                }
              },
              {
                "href": "/myPulsatileCharacteristic",
                "rep": {
                  "characteristic": 1
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-09T12:15:00+08:00"
                }
```

```
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/PulseOximeterAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"),
pulsatile characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example": [
            {
              "href": "/mySpO2",
              "rt": [
                "oic.r.spo2"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myPulseRate",
              "rt": [
                "oic.r.pulserate"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myPulsatileOccurrence",
              "rt": [
                "oic.r.pulsatileoccurrence"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myPulsatileCharacteristic",
              "rt": [
                "oic.r.pulsatilecharacteristic"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myUserId",
              "rt": [
                "oic.r.userid"
              ],
              "if": [
                "oic.if.r",
```

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```
                "oic.if.baseline"
              ]
            },
            {
              "href": "/myTimeStamp",
              "rt": [
                "oic.r.time.stamp"
              ],
              "if": [
                "oic.if.r",
                "oic.if.baseline"
              ]
            }
          ],
          "schema": {
            "$ref": "#/definitions/links"
          }
        }
      }
    }
  },
  "/PulseOximeterAMResURI?if=oic.if.baseline": {
    "get": {
      "description": "This Resource describes the Properties associated with Pulse Oximeter.\n The
Resource is an Atomic Measurement of SpO2 (\"oic.r.spo2\"), pulse rate (\"oic.r.pulserate\"),
pulsatile characteristic (\"oic.r.pulsatilecharacteristic\"), pulsatileoccurrence
(\"oic.r.pulsatileoccurrence\"), observed time (\"oic.r.time.stamp\"), and user ID
(\"oic.r.userid\").",
      "parameters": [
        {
          "$ref": "#/parameters/interface-all"
        }
      ],
      "responses": {
        "200": {
          "description": "",
          "x-example":
            {
              "rt": [
                "oic.r.pulseoximeter-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.spo2",
                "oic.r.pulserate"
              ],
              "rts": [
                "oic.r.spo2",
                "oic.r.pulserate",
                "oic.r.pulsatileoccurrence",
                "oic.r.pulsatilecharacteristic",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
              "links": [
                {
                  "href": "/mySpO2",
                  "rt": [
                    "oic.r.spo2"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulseRate",
```

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```
                  "rt": [
                    "oic.r.pulserate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulsatileOccurrence",
                  "rt": [
                    "oic.r.pulsatileoccurrence"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myPulsatileCharacteristic",
                  "rt": [
                    "oic.r.pulsatilecharacteristic"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "batch-retrieve": {
```

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```
      "title": "Collection Batch Retrieve Format",
      "minItems": 1,
      "items": {
        "additionalProperties": true,
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/SpO2.swagger.json#/definitions/SpO2"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulseRateResURI.swagger.json#/definition
s/PulseRate"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileCharacteristic.swagger.json#/de
finitions/pulsatilecharacteristic"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/PulsatileOccurrence.swagger.json#/defini
tions/pulsatileoccurrence"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "links": {
      "type": "array",
      "items": {
        "$ref": "#/definitions/oic.oic-link"
      }
    },
    "baseline": {
      "properties": {
        "rt": {
          "items": {
            "enum": [
              "oic.r.pulseoximeter-am",
              "oic.wk.atomicmeasurement"
            ]
          },
          "minItems": 2,
          "type": "array",
          "uniqueItems": true,
          "readOnly": true
```

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```
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "rts": {
          "description": "This Property contains all possible Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate",
              "oic.r.pulsatilecharacteristic",
              "oic.r.pulsatileoccurrence",
              "oic.r.time.stamp",
              "oic.r.userid"
            ]
          },
          "minItems": 1,
          "type": "array",
          "uniqueItems": true
        },
        "rts-m": {
          "description": "This Property contains all mandatory Resource Types for this Atomic
Measurement.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate"
            ]
          },
          "maxItems": 2,
          "minItems": 2,
          "type": "array",
          "readOnly": true,
          "uniqueItems": true
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
```

```
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "if": {
          "description": "The interface set supported by this resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ],
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.spo2",
              "oic.r.pulserate",
              "oic.r.pulsatilecharacteristic",
              "oic.r.pulsatileoccurrence",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
```

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```
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.140.5 Property definition

Table 288 defines the Properties that are part of the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 288 – The Property definitions of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	No	Read Only	
links	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
rts	array: see schema	No	Read Write	This Property contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This Property contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
if	array: see schema	Yes	Read Write	The interface set supported by this resource
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
rt	array: see schema	Yes	Read Only	The Resource Type.

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title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.140.6 CRUDN behaviour

Table 289 defines the CRUDN operations that are supported on the "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement" Resource Type.

Table 289 – The CRUDN operations of the Resource with type "rt" = "oic.r.pulseoximeter-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.141 Sleep

7.141.1 Introduction

This Resource describes the Properties associated with Sleep.
Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

7.141.2 Example URI

/SleepResURI

7.141.3 Resource type

The Resource Type is defined as: "oic.r.sleep".

7.141.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep",
    "version": "2018-07-12",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SleepResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep.\nSleep shows
the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep,
deep sleep), along with a sleep score indicating the quality of sleep.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
```

```
      "responses": {
        "200": {
          "description": "Retrieves the sleep information.",
          "x-example": {
            "rt": [
              "oic.r.sleep"
            ],
            "if": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "awake": 1440,
            "nrem1": 1440,
            "nrem2": 14400,
            "nrem3": 1440,
            "nrem4": 4320,
            "rem": 5760,
            "lightsleep": 15840,
            "deepsleep": 5760,
            "sleepscore": 70.0
          },
          "schema": {
            "$ref": "#/definitions/Sleep"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "Sleep": {
    "properties": {
      "awake": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Awake stage (in seconds)"
      },
      "nrem1": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 1 (in seconds)"
      },
      "nrem2": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 2 (in seconds)"
      },
      "nrem3": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 3 (in seconds)"
      },
      "nrem4": {
        "type": "integer",
        "minimum": 0,
        "readOnly": true,
        "description": "Time spent in Non Rapid Eye Movement stage 4 (in seconds)"
```

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```
        },
        "rem": {
          "type": "integer",
          "minimum": 0,
          "readOnly": true,
          "description": "Time spent in Rapid Eye Movement (in seconds)"
        },
        "lightsleep": {
          "type": "integer",
          "minimum": 0,
          "readOnly": true,
          "description": "Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in
seconds)"
        },
        "deepsleep": {
          "type": "integer",
          "minimum": 0,
          "readOnly": true,
          "description": "Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in
seconds)"
        },
        "sleepscore": {
          "type": "number",
          "minimum": 0,
          "readOnly": true,
          "description": "Score computed from the time spent in each sleep stage, indicative of the
quality of sleep"
        },
        "if": {
          "description": "The Interface set supported by this Resource",
          "type": "array",
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "items": {
            "type": "string",
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ]
          }
        },
        "rt": {
          "description": "Resource Type",
          "type": "array",
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "items": {
            "type": "string",
            "enum": [
              "oic.r.sleep"
            ]
          }
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range_phases": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step_phases": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "range_score": {
          "$ref":
```

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```
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step_score": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "precision": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "awake",
        "nrem1",
        "nrem2",
        "nrem3",
        "rem"
      ]
    }
  }
}
```


7.141.5 Property definition

Table 290 defines the Properties that are part of the "oic.r.sleep" Resource Type.

Table 290 – The Property definitions of the Resource with type "rt" = "oic.r.sleep".

Property name	Value type	Mandatory	Access mode	Description
awake	integer	Yes	Read Only	Time spent in Awake stage (in seconds)
nrem1	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 1 (in seconds)
nrem2	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 2 (in seconds)
nrem3	integer	Yes	Read Only	Time spent in Non Rapid Eye Movement stage 3 (in seconds)
nrem4	integer	No	Read Only	Time spent in Non Rapid Eye Movement stage 4 (in seconds)
rem	integer	Yes	Read Only	Time spent in Rapid Eye Movement (in seconds)
lightsleep	integer	No	Read Only	Time spent in Light Sleep stage, consisting in NREM stages 1 and 2 (in seconds)
deepsleep	integer	No	Read Only	Time spent in Deep Sleep stage, consisting in NREM stages 3 and 4 (in seconds)

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sleepscore	number	No	Read Only	Score computed from the time spent in each sleep stage, indicative of the quality of sleep
if	array: see schema	No	Read Only	The Interface set supported by this Resource
rt	array: see schema	No	Read Only	Resource Type
n	multiple types: see schema	No	Read Write	
range_phases	multiple types: see schema	No	Read Write	
step_phases	multiple types: see schema	No	Read Write	
range_score	multiple types: see schema	No	Read Write	
step_score	multiple types: see schema	No	Read Write	
precision	multiple types: see schema	No	Read Write	

7.141.6 CRUDN behaviour

Table 291 defines the CRUDN operations that are supported on the "oic.r.sleep" Resource Type.

Table 291 – The CRUDN operations of the Resource with type "rt" = "oic.r.sleep".

Create	Read	Update	Delete	Notify
	get			observe

7.142 Sleep Monitor Atomic Measurement Batch Representation

7.142.1 Introduction

This Resource describes the Properties associated with Sleep Monitor.
The Resource is an Atomic Measurement of sleep (oic.r.sleep).
Sleep shows the time spent in each of the sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep score indicating the quality of sleep.

7.142.2 Example URI

/SleepMonitorAMResURI

7.142.3 Resource type

The Resource Type is defined as: "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

7.142.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sleep Monitor Atomic Measurement Batch Representation",
    "version": "2018-08-29",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
```

```
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SleepMonitorAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe
Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the
sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep
score indicating the quality of sleep.",
        "parameters": [
          {
            "$ref": "#/parameters/interface-b"
          }
        ],
        "responses": {
          "200": {
            "description": "Retrieves the sleep monitor's information.",
            "x-example": [
              {
                "href": "/mySleepMonitor",
                "rep": {
                  "awake": 1440,
                  "nrem1": 1440,
                  "nrem2": 14400,
                  "nrem3": 1440,
                  "nrem4": 4320,
                  "rem": 5760,
                  "lightsleep": 15840,
                  "deepsleep": 5760,
                  "sleepscore": 70.0
                }
              },
              {
                "href": "/myHeartRate",
                "rep": {
                  "heartrate": 70
                }
              },
              {
                "href": "/myUserId",
                "rep": {
                  "userid": "USER1"
                }
              },
              {
                "href": "/myTimeStamp",
                "rep": {
                  "timestamp": "2018-11-08T21:00:00+08:00"
                }
              }
            ],
            "schema": {
              "$ref": "#/definitions/batch-retrieve"
            }
          }
        }
      }
    },
    "/SleepMonitorAMResURI?if=oic.if.ll": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe
Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the
sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep
score indicating the quality of sleep.",
```

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```
        "parameters": [
          {
            "$ref": "#/parameters/interface-ll"
          }
        ],
        "responses": {
          "200": {
            "description": "Retrieves the sleep monitor's information.",
            "x-example": [
              {
                "href": "/mySleepMonitor",
                "rt": [
                  "oic.r.sleep"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myHeartRate",
                "rt": [
                  "oic.r.heartrate"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/SleepMonitorAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with Sleep Monitor.\nThe
Resource is an Atomic Measurement of sleep (oic.r.sleep).\nSleep shows the time spent in each of the
sleep stages (awake, nrem1, nrem2, nrem3, nrem4, rem, light sleep, deep sleep), along with a sleep
score indicating the quality of sleep.",
        "parameters": [
          {
            "$ref": "#/parameters/interface-baseline"
          }
        ],
        "responses": {
          "200": {
            "description": "Retrieves the sleep monitor's information.",
            "x-example": {
```

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```
              "rt": [
                "oic.r.sleepmonitor-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts-m": [
                "oic.r.sleep"
              ],
              "rts": [
                "oic.r.sleep",
                "oic.r.heartrate",
                "oic.r.time.stamp",
                "oic.r.userid"
              ],
              "links": [
                {
                  "href": "/mySleepMonitor",
                  "rt": [
                    "oic.r.sleep"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myHeartRate",
                  "rt": [
                    "oic.r.heartrate"
                  ],
                  "if": [
                    "oic.if.s",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myUserId",
                  "rt": [
                    "oic.r.userid"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                },
                {
                  "href": "/myTimeStamp",
                  "rt": [
                    "oic.r.time.stamp"
                  ],
                  "if": [
                    "oic.if.r",
                    "oic.if.baseline"
                  ]
                }
              ]
            },
            "schema": {
              "$ref": "#/definitions/baseline"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface-ll": {
      "in": "query",
```

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```
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.ll"
      ]
    },
    "interface-b": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b"
      ]
    },
    "interface-baseline": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.baseline"
      ]
    },
    "interface-all": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.b",
        "oic.if.ll",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "batch-retrieve": {
      "title": "Atomic Measurement Batch Retrieve Format",
      "minItems": 1,
      "uniqueItems": true,
      "readOnly": true,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "description": " The response payload from an Atomic Measurement (batch) resource",
            "type": "object",
            "items": {
              "anyOf": [
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/Sleep.swagger.json#/definitions/Sleep"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeartRate.swagger.json#/definitions/Hear
tRate"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
                },
                {
                  "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
                }
              ]
            }
```

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```
      }
    },
    "required": [
      "href",
      "rep"
    ],
    "type": "object"
  },
  "type": "array"
},
"links": {
  "type": "array",
  "items": {
    "$ref": "#/definitions/oic.oic-link"
  }
},
"baseline": {
  "properties": {
    "rt": {
      "type": "array",
      "readOnly": true,
      "uniqueItems": true,
      "minItems": 2,
      "items": {
        "type": "string",
        "enum": [
          "oic.r.sleepmonitor-am",
          "oic.wk.atomicmeasurement"
        ]
      }
    },
    "rts": {
      "description": "This contains all possible resource types for this atomic measurement.",
      "type": "array",
      "uniqueItems": true,
      "minItems": 1,
      "readOnly": true,
      "items": {
        "type": "string",
        "enum": [
          "oic.r.sleep",
          "oic.r.heartrate",
          "oic.r.userid",
          "oic.r.time.stamp"
        ]
      }
    },
    "rts-m": {
      "description": "This contains all mandatory resource types for this atomic measurement.",
      "type": "array",
      "uniqueItems": true,
      "minItems": 1,
      "maxItems": 1,
      "readOnly": true,
      "items": {
        "type": "string",
        "enum": [
          "oic.r.sleep"
        ]
      }
    },
    "if": {
      "description": "The interface set supported by this resource",
      "type": "array",
      "readOnly": true,
      "minItems": 3,
      "uniqueItems": true,
      "items": {
        "type": "string",
        "enum": [
          "oic.if.b",
          "oic.if.ll",
```

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```
              "oic.if.baseline"
            ]
          }
        },
        "links": {
          "$ref": "#/definitions/links"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type": "object",
      "required": [
        "rt",
        "if",
        "rts-m"
      ]
    },
    "oic.oic-link": {
      "properties": {
        "if": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "enum": [
              "oic.if.baseline",
              "oic.if.s",
              "oic.if.r"
            ]
          }
        },
        "rt": {
          "type": "array",
          "readOnly": true,
          "uniqueItems": true,
          "minItems": 1,
          "items": {
            "type": "string",
            "enum": [
              "oic.r.sleep",
              "oic.r.heartrate",
              "oic.r.userid",
              "oic.r.time.stamp"
            ]
          }
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
```

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```
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```


7.142.5 Property definition

Table 292 defines the Properties that are part of the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 292 – The Property definitions of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	The response payload from an Atomic Measurement (batch) resource
rt	array: see schema	Yes	Read Only	
rts	array: see schema	No	Read Only	This contains all possible resource types for this atomic measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory resource types for this atomic measurement.
if	array: see schema	Yes	Read Only	The interface set supported by this resource
links	multiple types: see schema	No	Read Write	

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n	multiple types: see schema	No	Read Write	
if	array: see schema	Yes	Read Only	
rt	array: see schema	Yes	Read Only	
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	
eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.142.6 CRUDN behaviour

Table 293 defines the CRUDN operations that are supported on the "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement" Resource Type.

Table 293 – The CRUDN operations of the Resource with type "rt" = "oic.r.sleepmonitor-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.143 SpO2 for Pulse Oximeter

7.143.1 Introduction

This Resource describes the Properties associated with a person's blood oxygen saturation level. The spo2 and perfusion Properties are read-only value that is provided by the server. When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.143.2 Example URI

/SpO2ResURI

7.143.3 Resource type

The Resource Type is defined as: "oic.r.spo2".

7.143.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "SpO2 for Pulse Oximeter",
    "version": "2019-03-04",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
```

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```
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SpO2ResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person's blood
oxygen saturation level.\n The spo2 and perfusion Properties are read-only value that is provided by
the server.\n When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.spo2"
              ],
              "spo2": 99.0,
              "perfusion": 20.0
            },
            "schema": {
              "$ref": "#/definitions/SpO2"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "SpO2": {
      "properties": {
        "spo2": {
          "description": "This Property describes the estimation of the oxygen saturation level in
percentage.",
          "type": "number",
          "minimum": 0.0,
          "maximum": 100.0,
          "readOnly": true
        },
        "perfusion": {
          "description": "This Property describes the ratio of AC over DC of PPG.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
```

```
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.spo2"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "spo2_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "perfusion_range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "spo2_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "perfusion_step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "spo2_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "perfusion_precision": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        }
      },
      "type": "object",
      "required": [
        "spo2"
      ]
    }
  }
}
```

7.143.5 Property definition

Table 294 defines the Properties that are part of the "oic.r.spo2" Resource Type.

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Table 294 – The Property definitions of the Resource with type "rt" = "oic.r.spo2".

Property name	Value type	Mandatory	Access mode	Description
spo2	number	Yes	Read Only	This Property describes the estimation of the oxygen saturation level in percentage.
perfusion	number	No	Read Only	This Property describes the ratio of AC over DC of PPG.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
spo2_range	multiple types: see schema	No	Read Write	
perfusion_range	multiple types: see schema	No	Read Write	
spo2_step	multiple types: see schema	No	Read Write	
perfusion_step	multiple types: see schema	No	Read Write	
spo2_precision	multiple types: see schema	No	Read Write	
perfusion_precision	multiple types: see schema	No	Read Write	

7.143.6 CRUDN behaviour

Table 295 defines the CRUDN operations that are supported on the "oic.r.spo2" Resource Type.

Table 295 – The CRUDN operations of the Resource with type "rt" = "oic.r.spo2".

Create	Read	Update	Delete	Notify
	get			observe

7.144 Cadence

7.144.1 Introduction

This Resource describes the cadence, which is the number of revolutions of crank per minute when cyclists pedal the pedals.
The unit, which is the default unit, is rpm.
The cadence Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.144.2 Example URI

/CadenceResURI

7.144.3 Resource type

The Resource Type is defined as: "oic.r.cadence".

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7.144.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Cadence",
    "version": "2019-06-11",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/CadenceResURI": {
      "get": {
        "description": "This Resource describes the cadence, which is the number of revolutions of
crank per minute when cyclists pedal the pedals.\n The unit, which is the default unit, is rpm.\n
The cadence Property is a read-only value that is provided by the server.\n When range (from
\"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cadence"
              ],
              "cadence": 60
            },
            "schema": {
              "$ref": "#/definitions/Cadence"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Cadence": {
      "properties": {
        "cadence": {
          "description": "This Property describes the rate at which a cyclist is pedalling/turning
the pedals.",
          "type": "integer",
```

```
          "minimum": 0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cadence"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        }
      },
      "type": "object",
      "required": [
        "cadence"
      ]
    }
  }
}
```

7.144.5 Property definition

Table 296 defines the Properties that are part of the "oic.r.cadence" Resource Type.

Table 296 – The Property definitions of the Resource with type "rt" = "oic.r.cadence".

Property name	Value type	Mandatory	Access mode	Description
cadence	integer	Yes	Read Only	This Property describes the rate at which a cyclist is pedalling/turning the pedals.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

7.144.6 CRUDN behaviour

Table 297 defines the CRUDN operations that are supported on the "oic.r.cadence" Resource Type.

Table 297 – The CRUDN operations of the Resource with type "rt" = "oic.r.cadence".

Create	Read	Update	Delete	Notify
	get			observe

7.145 Circuit Breaker (IEC 61850)

7.145.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker.

7.145.2 Example URI

/CircuitBreakerResURI

7.145.3 Resource type

The Resource Type is defined as: "oic.r.circuitbreaker".

7.145.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Circuit Breaker (IEC 61850)",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CircuitBreakerResURI" : {
      "get": {
        "description": "This Resource describes functions for the control and monitoring of IEC
61850 based circuit breaker.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.circuitbreaker"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "status": "on",
                  "ratedcurrent": 10.0,
```

```
                "ratedbreakingcurrent": 2500.0,
                "ratedvoltage": 460.0,
                "leakagecurrent": 0.5,
                "insulationresistance": 0.3,
                "timestamp": "2015-11-05T14:30:00.10Z"
              },
            "schema": { "$ref": "#/definitions/CircuitBreaker" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "CircuitBreaker" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type",
          "items": {
              "enum": ["oic.r.circuitbreaker"],
              "maxLength": 64,
              "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status" : {
          "description": "The circuit breaker status. The status can only be reset out of bounds.",
          "readOnly": true,
          "type": "string",
          "enum" : [ "on", "off", "trip"]
        },
        "ratedcurrent" : {
          "description": "The rated current in Ampere, defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "ratedbreakingcurrent" : {
          "description": "The rated breaking current in Ampere, defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "ratedvoltage" : {
          "description": "The rated voltage in Volts, defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "leakagecurrent" : {
          "description": "The leakage current in mA.",
          "readOnly": true,
          "type": "number"
        },
        "insulationresistance" : {
          "description": "Insulation resistance of circuit breaker (M Ohm).",
          "readOnly": true,
          "type": "number"
        },
        "timestamp": {
          "description": "An RFC3339 formatted time indicating when the data was observed (e.g.:
2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
          "format": "date-time",
          "readOnly": true,
          "type": "string"
```

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```
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["status", "ratedcurrent", "ratedbreakingcurrent", "ratedvoltage", "timestamp"]
    }
  }
}
```

7.145.5 Property definition

Table 298 defines the Properties that are part of the "oic.r.circuitbreaker" Resource Type.

Table 298 – The Property definitions of the Resource with type "rt" = "oic.r.circuitbreaker".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
status	string	Yes	Read Only	The circuit breaker status. The status can only be reset out of bounds.
ratedcurrent	number	Yes	Read Only	The rated current in Ampere, defined at manufacturing time.
ratedbreakingcurrent	number	Yes	Read Only	The rated breaking current in Ampere, defined at manufacturing time.
ratedvoltage	number	Yes	Read Only	The rated voltage in Volts, defined at manufacturing time.
leakagecurrent	number	No	Read Only	The leakage current in mA.
insulationresistance	number	No	Read Only	Insulation resistance of circuit breaker (M Ohm).
timestamp	string	Yes	Read Only	An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-

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				19T16:39:57-08:00). Note that 1/100 time resolution should be used.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.145.6 CRUDN behaviour

Table 299 defines the CRUDN operations that are supported on the "oic.r.circuitbreaker" Resource Type.

Table 299 – The CRUDN operations of the Resource with type "rt" = "oic.r.circuitbreaker".

Create	Read	Update	Delete	Notify
	get			observe

7.146 Cycling Power

7.146.1 Introduction

This Resource describes the cycling power, which is the amount of energy transferred or converted per unit time.
The unit, which is the default SI unit, is W (which is equal to one joule per second).
The power Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.146.2 Example URI

/CyclingPowerResURI

7.146.3 Resource type

The Resource Type is defined as: "oic.r.cyclingpower".

7.146.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Cycling Power",
    "version": "2019-06-11",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/CyclingPowerResURI": {
```

```
      "get": {
        "description": "This Resource describes the cycling power, which is the amount of energy
transferred or converted per unit time.\n The unit, which is the default SI unit, is W (which is
equal to one joule per second).\n The power Property is a read-only value that is provided by the
server.\n When range (from \"oic.r.baseresource\") is omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.cyclingpower"
              ],
              "power": 200.0,
              "power-left": 100.0,
              "power-right": 100.0
            },
            "schema": {
              "$ref": "#/definitions/CyclingPower"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "CyclingPower": {
      "properties": {
        "power": {
          "description": "The current overall power output in watts.",
          "$ref": "#/definitions/power"
        },
        "power-left": {
          "description": "The current power output in watts from the left pedal.",
          "$ref": "#/definitions/power"
        },
        "power-right": {
          "description": "The current power output in watts from the right pedal.",
          "$ref": "#/definitions/power"
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.cyclingpower"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
```

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```
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        }
      },
      "type": "object",
      "required": [
        "power"
      ]
    },
    "power": {
      "description": "This Resource describes the power, which is the amount of energy transferred
or converted per unit time, in W (which is equal to one joule per second).",
      "type": "number",
      "minimum": 0.0,
      "readOnly": true
    }
  }
}
```

7.146.5 Property definition

Table 300 defines the Properties that are part of the "oic.r.cyclingpower" Resource Type.

Table 300 – The Property definitions of the Resource with type "rt" = "oic.r.cyclingpower".

Property name	Value type	Mandatory	Access mode	Description
power	multiple types: see schema	Yes	Read Write	The current overall power output in watts.
power-left	multiple types: see schema	No	Read Write	The current power output in watts from the left pedal.
power-right	multiple types: see schema	No	Read Write	The current power output in watts from the right pedal.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	

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step	multiple types: see schema	No	Read Write	

7.146.6 CRUDN behaviour

Table 301 defines the CRUDN operations that are supported on the "oic.r.cyclingpower" Resource Type.

Table 301 – The CRUDN operations of the Resource with type "rt" = "oic.r.cyclingpower".

Create	Read	Update	Delete	Notify
	get			observe

7.147 Inverter (IEC 61850)

7.147.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based circuit breaker.

7.147.2 Example URI

/InverterResURI

7.147.3 Resource type

The Resource Type is defined as: "oic.r.inverter".

7.147.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Inverter (IEC 61850)",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/InverterResURI" : {
      "get": {
        "description": "This Resource describes functions for the control and monitoring of IEC
61850 based circuit breaker.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.inverter"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "status": "on",
                  "ratedpower": 36.0,
                  "minvoltmppt": 200.0,
                  "maxvoltmppt": 1000.0,
                  "inputvoltage": 980.0,
                  "inputcurrent": 22.0,
                  "outputpower": 61.0,
                  "timestamp": "2015-11-05T14:30:00.13Z"
```

```
              },
              "schema": { "$ref": "#/definitions/Inverter" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Inverter" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type",
          "items": {
              "enum": ["oic.r.inverter"],
              "maxLength": 64,
              "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status" : {
          "description": "The inverter status. The status can only be reset out of bounds.",
          "readOnly": true,
          "type": "string",
          "enum" : [ "on", "off", "trip"]
        },
        "ratedpower" : {
          "description": "The rated power in kW, defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "minvoltmppt" : {
          "description": "Minimum voltage for MPPT (Maximum power point tracking) control method
(V), defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "maxvoltmppt" : {
          "description": "Maximum voltage for MPPT (Maximum power point tracking) control method
(V), defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "inputvoltage" : {
          "description": "input voltage in Volts.",
          "readOnly": true,
          "type": "number"
        },
        "inputcurrent" : {
          "description": "input current in Amperes.",
          "readOnly": true,
          "type": "number"
        },
        "outputpower" : {
          "description": "output power in kW.",
          "readOnly": true,
          "type": "number"
        },
        "timestamp": {
          "description": "An RFC3339 formatted time indicating when the data was observed (e.g.:
2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Resolution in 1/100 second.",
          "format": "date-time",
```

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```
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["status", "ratedpower", "minvoltmppt", "maxvoltmppt",
"inputvoltage","inputcurrent","outputpower","timestamp"]
    }
  }
}
```

7.147.5 Property definition

Table 302 defines the Properties that are part of the "oic.r.inverter" Resource Type.

Table 302 – The Property definitions of the Resource with type "rt" = "oic.r.inverter".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
status	string	Yes	Read Only	The inverter status. The status can only be reset out of bounds.
ratedpower	number	Yes	Read Only	The rated power in kW, defined at manufacturing time.
minvoltmppt	number	Yes	Read Only	Minimum voltage for MPPT (Maximum power point tracking) control method (V), defined at manufacturing time.
maxvoltmppt	number	Yes	Read Only	Maximum voltage for MPPT (Maximum power point tracking) control method (V), defined at manufacturing time.
inputvoltage	number	Yes	Read Only	input voltage in Volts.

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inputcurrent	number	Yes	Read Only	input current in Amperes.
outputpower	number	Yes	Read Only	output power in kW.
timestamp	string	Yes	Read Only	An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Resolution in 1/100 second.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.147.6 CRUDN behaviour

Table 303 defines the CRUDN operations that are supported on the "oic.r.inverter" Resource Type.

Table 303 – The CRUDN operations of the Resource with type "rt" = "oic.r.inverter".

Create	Read	Update	Delete	Notify
	get			observe

7.148 PV array system connection terminal (IEC 61850)

7.148.1 Introduction

This Resource describes functions for the control and monitoring of IEC 61850 based PV Array system connection terminal.

7.148.2 Example URI

/PVConnectionTerminalResURI

7.148.3 Resource type

The Resource Type is defined as: "oic.r.pvconnectionterminal".

7.148.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "PV array system connection terminal (IEC 61850)",
    "version": "20190613",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/PVConnectionTerminalResURI" : {
      "get": {
```

```
        "description": "This Resource describes functions for the control and monitoring of IEC
61850 based PV Array system connection terminal.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.pvconnectionterminal"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "ratedarrayvoltage": 46.6,
                  "ratedarraycurrent": 10.2,
                  "arrayvoltage": 37.0,
                  "arraycurrent": 9.1,
                  "leakagecurrent": 0.5,
                  "insulationresistance": 0.3,
                  "timestamp": "2015-11-05T14:30:00.15Z"
                },
              "schema": { "$ref": "#/definitions/PVArrayConnectionTerminal" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "PVArrayConnectionTerminal" : {
      "properties": {
        "rt" : {
          "description": "The Resource Type",
          "items": {
              "enum": ["oic.r.pvconnectionterminal"],
              "maxLength": 64,
              "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "ratedarrayvoltage" : {
          "description": "Rated voltage of array (Nominal values of maximum power voltage * number
of modules) (V)",
          "readOnly": true,
          "type": "number"
        },
        "ratedarraycurrent" : {
          "description": "Rated current of array (Nominal values of maximum power current * number
of modules) (A), defined at manufacturing time.",
          "readOnly": true,
          "type": "number"
        },
        "arrayvoltage" : {
          "description": "Output voltage of array in volts (V).",
          "readOnly": true,
          "type": "number"
        },
        "arraycurrent" : {
          "description": "Output current of array in Ampere (A).",
          "readOnly": true,
          "type": "number"
        },
        "leakagecurrent" : {
```

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```
          "description": "The leakage current in mA.",
          "readOnly": true,
          "type": "number"
        },
        "insulationresistance" : {
          "description": "Insulation resistance of circuit breaker (M Ohm).",
          "readOnly": true,
          "type": "number"
        },
        "timestamp": {
          "description": "An RFC3339 formatted time indicating when the data was observed (e.g.:
2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.",
          "format": "date-time",
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["ratedarrayvoltage", "ratedarraycurrent", "arrayvoltage", "arraycurrent",
"timestamp"]
    }
  }
}
```


7.148.5 Property definition

Table 304 defines the Properties that are part of the "oic.r.pvconnectionterminal" Resource Type.

Table 304 – The Property definitions of the Resource with type "rt" = "oic.r.pvconnectionterminal".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
ratedarrayvoltage	number	Yes	Read Only	Rated voltage of array (Nominal values of maximum power voltage * number of modules) (V)
ratedarraycurrent	number	Yes	Read Only	Rated current of array (Nominal values of maximum power current * number of modules)

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				(A), defined at manufacturing time.
arrayvoltage	number	Yes	Read Only	Output voltage of array in volts (V).
arraycurrent	number	Yes	Read Only	Output current of array in Ampere (A).
leakagecurrent	number	No	Read Only	The leakage current in mA.
insulationresistance	number	No	Read Only	Insulation resistance of circuit breaker (M Ohm).
timestamp	string	Yes	Read Only	An RFC3339 formatted time indicating when the data was observed (e.g.: 2016-02-15T09:19Z, 1996-12-19T16:39:57-08:00). Note that 1/100 time resolution should be used.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.148.6 CRUDN behaviour

Table 305 defines the CRUDN operations that are supported on the "oic.r.pvconnectionterminal" Resource Type.

Table 305 – The CRUDN operations of the Resource with type "rt" = "oic.r.pvconnectionterminal".

Create	Read	Update	Delete	Notify
	get			observe

7.149 Speed

7.149.1 Introduction

This Resource describes the speed of an object, which is the magnitude of its velocity.
The unit, which is the default SI unit, is metre per second.
The speed Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.149.2 Example URI

/SpeedResURI

7.149.3 Resource type

The Resource Type is defined as: "oic.r.speed".

7.149.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Speed",
```

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```
    "version": "2019-05-13",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/SpeedResURI": {
      "get": {
        "description": "This Resource describes the speed of an object, which is the magnitude of
its velocity.\n The unit, which is the default SI unit, is metre per second.\n The speed Property is
a read-only value that is provided by the server.\n When range (from \"oic.r.baseresource\") is
omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.speed"
              ],
              "speed": 10.0
            },
            "schema": {
              "$ref": "#/definitions/Speed"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Speed": {
      "properties": {
        "speed": {
          "description": "This Property describes the speed of an object in metre per second (SI
Unit). It should be noted, however, that the most common unit of speed everyday usage is the
kilometre per hour or, in the US and the UK, miles per hour.",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
```

```
          "items": {
            "enum": [
              "oic.r.speed"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        }
      },
      "type": "object",
      "required": [
        "speed"
      ]
    }
  }
}
```

7.149.5 Property definition

Table 306 defines the Properties that are part of the "oic.r.speed" Resource Type.

Table 306 – The Property definitions of the Resource with type "rt" = "oic.r.speed".

Property name	Value type	Mandatory	Access mode	Description
speed	number	Yes	Read Only	This Property describes the speed of an object in metre per second (SI Unit). It should be noted, however, that the most common unit of speed everyday usage is the kilometre per hour or, in the US and the UK, miles per hour.
rt	array: see schema	No	Read Only	The Resource Type.

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n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

7.149.6 CRUDN behaviour

Table 307 defines the CRUDN operations that are supported on the "oic.r.speed" Resource Type.

Table 307 – The CRUDN operations of the Resource with type "rt" = "oic.r.speed".

Create	Read	Update	Delete	Notify
	get			observe

7.150 Torque

7.150.1 Introduction

This Resource describes the torque, which is the rotational equivalent of linear force.
The unit, which is the default SI unit, is N*m (Newton metre).
The torque Property is a read-only value that is provided by the server.
When range (from "oic.r.baseresource") is omitted the default is 0 to +MAXFLOAT.

7.150.2 Example URI

/TorqueResURI

7.150.3 Resource type

The Resource Type is defined as: "oic.r.torque".

7.150.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Torque",
    "version": "2019-09-25",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/TorqueResURI": {
      "get": {
        "description": "This Resource describes the torque, which is the rotational equivalent of
linear force.\n The unit, which is the default SI unit, is N*m (Newton metre).\n The torque Property
is a read-only value that is provided by the server.\n When range (from \"oic.r.baseresource\") is
```

```
omitted the default is 0 to +MAXFLOAT.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.torque"
              ],
              "torque": 10.0
            },
            "schema": {
              "$ref": "#/definitions/Torque"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "Torque": {
      "properties": {
        "torque": {
          "description": "This Resource describes the torque, which is the rotational equivalent of
linear force, in N*m (Newton metre).",
          "type": "number",
          "minimum": 0.0,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.torque"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
```


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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "range": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        }
      },
      "type": "object",
      "required": [
        "torque"
      ]
    }
  }
}
```


7.150.5 Property definition

Table 308 defines the Properties that are part of the "oic.r.torque" Resource Type.

Table 308 – The Property definitions of the Resource with type "rt" = "oic.r.torque".

Property name	Value type	Mandatory	Access mode	Description
torque	number	Yes	Read Only	This Resource describes the torque, which is the rotational equivalent of linear force, in N*m (Newton metre).
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	

7.150.6 CRUDN behaviour

Table 309 defines the CRUDN operations that are supported on the "oic.r.torque" Resource Type.

Table 309 – The CRUDN operations of the Resource with type "rt" = "oic.r.torque".

Create	Read	Update	Delete	Notify
	get			observe

7.151 Water Info

7.151.1 Introduction

This Resource describes the water information to indicate type of water currently provided by the device. The water type can be read or set.
The Property "supportedwatertypes" is an array of the possible water types are defined by the enumeration ["cold", "hot", "ambient", "ice"].
The Property "supportedadditivetypes" is an array of the possible additive types for water. The

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additive types mean optional types that can be added to the specific water type according to Client's preference and are defined by the enumeration ["none", "soda", "mineral"]. If absent, the default value is "none".
The Property "currentwatertype" is the currently desired water type.
The Property "currentadditivetypes" is the currently desired additive type(s).
For example, if "cold" is selected with the "currentwatertype", "soda" and "mineral" or both can be selected as "currentadditivetypes". Note that if "hot" is selected with the "currentwatertype", "soda" and "mineral" may be restricted for the "currentadditivetypes".

7.151.2 Example URI

/WaterInfoResURI

7.151.3 Resource type

The Resource Type is defined as: "oic.r.waterinfo".

7.151.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
      "title": "Water Info",
      "version": "2019-06-13",
      "license": {
          "name": "OCF Date Model License",
          "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
          "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
      },
  "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
      "/WaterInfoResURI":{
          "get": {
              "description": "This Resource describes the water information to indicate type of
water currently provided by the device. The water type can be read or set.\nThe Property
\"supportedwatertypes\" is an array of the possible water types are defined by the enumeration
[\"cold\", \"hot\", \"ambient\", \"ice\"].\nThe Property \"supportedadditivetypes\" is an array of
the possible additive types for water. The additive types mean optional types that can be added to
the specific water type according to Client's preference and are defined by the enumeration
[\"none\", \"soda\", \"mineral\"]. If absent, the default value is \"none\". \nThe Property
\"currentwatertype\" is the currently desired water type. \nThe Property \"currentadditivetypes\" is
the currently desired additive type(s). \nFor example, if \"cold\" is selected with the
\"currentwatertype\", \"soda\" and \"mineral\" or both can be selected as \"currentadditivetypes\".
Note that if \"hot\" is selected with the \"currentwatertype\", \"soda\" and \"mineral\" may be
restricted for the \"currentadditivetypes\".",

              "parameters": [
                   {"$ref": "#/parameters/interface"}
              ],
              "responses": {
                  "200": {
                      "description" : "RETRIEVES the set of supported water type information and
current desired water type information.",
                      "x-example":
                      {
                          "rt": ["oic.r.waterinfo"],
                          "if": ["oic.if.rw", "oic.if.baseline"],
                          "supportedwatertypes": ["cold", "hot", "ambient", "ice"],
                          "supportedadditivetypes": ["none", "soda", "mineral"],
                          "currentwatertype":  "cold",
                          "currentadditivetypes": ["soda", "mineral"]

                      },
                      "schema": {"$ref": "#/definitions/WaterInfo" }
```

```
                }
            }
        },
        "post":{
            "description": "Sets the desired water type.",
            "parameters": [
                 {"$ref": "#/parameters/interface"},
                 {
                     "name": "body",
                     "in": "body",
                     "required": true,
                     "schema": { "$ref": "#/definitions/WaterInfoUpdate" },
                     "x-example": {
                      "currentwatertype": "hot",
                      "currentadditivetypes": ["none"]
                     }
                 }
            ],
            "responses":{
                "200": {
                    "description" : "Indicates that the current desired water type and additive
type(s) were changed. \nThe new desired water type info is provided in the response.\n",
                    "x-example": {
                     "currentwatertype": "hot",
                     "currentadditivetypes": ["none"]
                    },
                    "schema": { "$ref": "#/definitions/WaterInfoUpdate" }
                },
                "403":{
                    "description" : "This response is generated by the OCF Server when the client
sends:\n  An UPDATE with an invalid property value for \"currentwatertype\".\nThe OCF Server
responds with the current resource representation.\n",
                    "x-example": {
                        "supportedwatertypes": ["cold", "hot", "ambient", "ice"],
                        "supportedadditivetypes": ["none", "soda", "mineral"],
                        "currentwatertype": "cold",
                        "currentadditivetypes": ["soda", "mineral"]
                    },
                   "schema": { "$ref": "#/definitions/WaterInfo" }
                }
            }
        }
    },
      "parameters": {
          "interface": {
              "in": "query",
              "name": "if",
              "type": "string",
              "enum": ["oic.if.rw", "oic.if.baseline"]
          }
      },
      "definitions": {
          "WaterInfo" : {
              "properties": {
                  "rt": {
                      "description": "The Resource Type.",
                      "items": {
                          "enum": ["oic.r.waterinfo"],
                          "maxLength": 64,
                          "type": "string"
                      },
                      "minItems": 1,
                      "uniqueItems": true,
                      "readOnly": true,
                      "type": "array"
                  },
                  "supportedwatertypes":{
                      "description": "The array of the possible water types.",
                      "items": {
                          "type": "string"
                      },
```

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```
                    "readOnly": true,
                    "type": "array"
                },
                "supportedadditivetypes":{
                    "description": "The array of the possible additive types.",
                    "items": {
                        "type": "string"
                    },
                    "readOnly": true,
                    "type": "array"
                },
                "currentwatertype": {
                    "description": " The currently desired water type.",
                    "type": "string"
                },
                 "currentadditivetypes":{
                    "description": "The currently desired additive type(s) according to Client's
preference.",
                    "items": {
                        "type": "string"
                    },
                    "minItems": 1,
                    "type": "array"
                },
                "n": {
                    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
                },
                "id": {
                    "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
                },
                "if": {
                    "description": "The OCF Interface set supported by this Resource.",
                    "items": {
                        "enum": [
                            "oic.if.rw",
                            "oic.if.baseline"
                            ],
                            "type": "string"
                           },
                            "minItems": 2,
                            "uniqueItems": true,
                            "readOnly": true,
                            "type": "array"
                    }
                },
                "type": "object",
                "required" : ["supportedwatertypes", "currentwatertype"]
          },
           "WaterInfoUpdate":{
               "properties":{
                    "currentwatertype": {
                        "description": "Set the desired water type.",
                        "type": "string"
                    },
                    "currentadditivetypes": {
                        "description": "Set the desired additive type(s).",
                        "items": {
                               "type": "string"
                              },
                               "minItems": 1,
                               "type": "array"
                        }
               },
               "type": "object",
               "required": ["currentwatertype"]

           }
        }
```

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}

7.151.5 Property definition

Table 310 defines the Properties that are part of the "oic.r.waterinfo" Resource Type.

Table 310 – The Property definitions of the Resource with type "rt" = "oic.r.waterinfo".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
supportedwatertypes	array: see schema	Yes	Read Only	The array of the possible water types.
supportedadditivetypes	array: see schema	No	Read Only	The array of the possible additive types.
currentwatertype	string	Yes	Read Write	The currently desired water type.
currentadditivetypes	array: see schema	No	Read Write	The currently desired additive type(s) according to Client's preference.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
currentwatertype	string	Yes	Read Write	Set the desired water type.
currentadditivetypes	array: see schema	No	Read Write	Set the desired additive type(s).

7.151.6 CRUDN behaviour

Table 311 defines the CRUDN operations that are supported on the "oic.r.waterinfo" Resource Type.

Table 311 – The CRUDN operations of the Resource with type "rt" = "oic.r.waterinfo".

Create	Read	Update	Delete	Notify
	get	post		observe

7.152 Deodorization

7.152.1 Introduction

This Resource describes a deodorization function, which can be supported by controlling on air filter.

The Property "mode" is a mode of the deodorization function. The supported modes are defined by the enumeration ["off", "on", "auto"].

"off" means that the deodorization function is not enabled.

"on" means that the deodorization function is active.

"auto" means that the deodorization function is automatically controlled depending on sensed air condition in the device inside.

The Property "currentstate" is the current state of the deodorization function. In the case of "auto"

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mode, if the sensed air condition is determined to be bad, the function will be "on". Then, "mode" value is "auto" and "currentstate" value is "on". If not, the function is remaining "off" state. Then, "currentstate" value is "off".

7.152.2 Example URI

/DeodorizationResURI

7.152.3 Resource type

The Resource Type is defined as: "oic.r.deodorization".

7.152.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Deodorization",
    "version": "20190820",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/DeodorizationResURI" : {
      "get": {
        "description": "This Resource describes a deodorization function, which can be supported by
controlling on air filter. \n The Property \"mode\" is a mode of the deodorization function. The
supported modes are defined by the enumeration [\"off\", \"on\", \"auto\"]. \n\"off\" means that the
deodorization function is not enabled.\n\"on\" means that the deodorization function is
active.\n\"auto\" means that the deodorization function is automatically controlled depending on
sensed air condition in the device inside. \nThe Property \"currentstate\" is the current state of
the deodorization function. In the case of \"auto\" mode, if the sensed air condition is determined
to be bad, the function will be \"on\". Then, \"mode\" value is \"auto\" and \"currentstate\" value
is \"on\". If not, the function is remaining \"off\" state. Then, \"currentstate\" value is
\"off\".",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current deodorization function state.",
              "x-example":
                {
                  "rt": ["oic.r.deodorization"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "mode": "auto",
                  "currentstate": "off"
                },
              "schema": { "$ref": "#/definitions/Deodorization" }
            }
        }
      },
      "post": {
        "description": "Sets the desired deodorization function state.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/DeodorizationUpdate" },
            "x-example":
```

```
              {
                "mode": "on"
              }
            }
          ],
          "responses": {
              "200": {
                "description" : "Indicates that the Deodorization function state was changed.\nThe new
state is provided in the response.\n",
                "x-example":
                  {
                    "mode": "on",
                    "currentstate": "on"
                  },
                "schema": { "$ref": "#/definitions/Deodorization" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"]
      }
    },
    "definitions": {
      "Deodorization" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.deodorization"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "mode": {
            "description": "The modes of the Deodorization function.",
            "enum": [
              "off",
              "on",
              "auto"
            ],
            "type": "string"
          },
          "currentstate": {
            "description": "The current state of the Deodorization function.",
            "enum": [
              "off",
              "on"
            ],
            "readOnly": true,
            "type": "string"
          },
          "n": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
```

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```
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["mode", "currentstate"]
    },
    "DeodorizationUpdate" : {
        "properties": {
                "mode": {
                  "description": "The modes of the Deodorization function.",
                  "enum": [
                    "off",
                    "on",
                    "auto"
                  ],
                  "type": "string"
                }
          },
      "type": "object",
      "required": ["mode"]
    }
  }
}
```

7.152.5 Property definition

Table 312 defines the Properties that are part of the "oic.r.deodorization" Resource Type.

Table 312 – The Property definitions of the Resource with type "rt" = "oic.r.deodorization".

Property name	Value type	Mandatory	Access mode	Description
Rt	array: see schema	No	Read Only	The Resource Type.
Mode	string	Yes	Read Write	The modes of the Deodorization function.
currentstate	string	Yes	Read Only	The current state of the Deodorization function.
N	multiple types: see schema	No	Read Write	
Id	multiple types: see schema	No	Read Write	
If	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
Mode	string	Yes	Read Write	The modes of the Deodorization function.

7.152.6 CRUDN behaviour

Table 313 defines the CRUDN operations that are supported on the "oic.r.deodorization" Resource Type.

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Table 313 – The CRUDN operations of the Resource with type "rt" = "oic.r.deodorization".

Create	Read	Update	Delete	Notify
	get	post		observe

7.153 KeyCard Switch

7.153.1 Introduction

This Resource describes the operation of a KeyCard style switch. It has one mandatory Property,"stateofcard", which is a string enum type. It has two enum values: "validCardInserted", "validCardNotInserted". "validCardInserted" means that a keycard was inserted and passed validation check. "validCardNotInserted" means that a keycard is not inserted or it was inserted but failed to pass validation check.

7.153.2 Example URI

/KeyCardSwitchResURI

7.153.3 Resource type

The Resource Type is defined as: "oic.r.keycardswitch".

7.153.4 OpenAPI 2.0 definition

```
{
        "swagger": "2.0",
        "info": {
                "title": "KeyCard Switch",
                "version": "20190807",
                "license": {
                        "name": "OCF Data Model License",
                        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
                        "x-copyright": "Copyright 2018-2019 Open Connectivity Foundation, Inc. All
rights reserved."
                },
                "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
        },
        "schemes": ["http"],
        "consumes": ["application/json"],
        "produces": ["application/json"],
        "paths": {
                "/KeyCardSwitchResURI" : {
                        "get": {
                                "description": "This Resource describes the operation of a KeyCard
style switch. It has one mandatory Property,\"stateofcard\", which is a string enum type. It has two
enum values: \"validCardInserted\", \"validCardNotInserted\". \"validCardInserted\" means that a
keycard was inserted and passed validation check. \"validCardNotInserted\" means that a keycard is
not inserted or it was inserted but failed to pass validation check.",
                                "parameters": [
                                        {"$ref": "#/parameters/interface"}
                                ],
                                "responses": {
                                        "200": {
                                                "description" : "",
                                                "x-example":
                                                {
                                                        "rt": ["oic.r.keycardswitch"],
                                                        "if": ["oic.if.s", "oic.if.baseline"],
                                                        "stateofcard": "validCardInserted"
                                                }
                                                ,
                                                "schema": { "$ref": "#/definitions/KeyCardSwitch" }
                                        }
                                }
                        }
                }
        },
```

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```
        "parameters": {
                "interface" : {
                        "in": "query",
                        "name": "if",
                        "type": "string",
                        "enum": ["oic.if.s", "oic.if.baseline"]
                }
        },
        "definitions": {
                "KeyCardSwitch" : {
                        "properties": {
                                "rt": {
                                        "description": "The Resource Type of KeyCardSwitch",
                                        "items": {
                                                "enum": ["oic.r.keycardswitch"],
                                                "maxLength": 64,
                                                "type": "string"
                                        },
                                        "minItems": 1,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                },
                                "stateofcard": {
                                        "description": "The status of the keycardswitch.
\"validCardInserted\" means that a keycard was inserted and passed validation check.
\"validCardNotInserted\" means that a keycard is not inserted or it was inserted but failed to pass
validation check.",
                                        "readOnly": true,
                                        "type": "string",
                                        "enum": [
                                                "validCardInserted",
                                                "validCardNotInserted"
                                        ]
                                },
                                "n": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
                                },
                                "id": {
                                        "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
                                },
                                "if": {
                                        "description": "The OCF Interface set supported by this
Resource.",
                                        "items": {
                                                "enum": [
                                                        "oic.if.s",
                                                        "oic.if.baseline"
                                                ],
                                                "type": "string"
                                        },
                                        "minItems": 2,
                                        "uniqueItems": true,
                                        "readOnly": true,
                                        "type": "array"
                                }
                        },
                        "type": "object",
                        "required": ["stateofcard"]
                }
        }
}
```

7.153.5 Property definition

Table 314 defines the Properties that are part of the "oic.r.keycardswitch" Resource Type.

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Table 314 – The Property definitions of the Resource with type "rt" = "oic.r.keycardswitch".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of KeyCardSwitch
stateofcard	string	Yes	Read Only	The status of the keycardswitch. "validCardInserted" means that a keycard was inserted and passed validation check. "validCardNotInserted" means that a keycard is not inserted or it was inserted but failed to pass validation check.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.153.6 CRUDN behaviour

Table 315 defines the CRUDN operations that are supported on the "oic.r.keycardswitch" Resource Type.

Table 315 – The CRUDN operations of the Resource with type "rt" = "oic.r.keycardswitch".

Create	Read	Update	Delete	Notify
	get			observe

7.154 Muscle Oxygen Saturation

7.154.1 Introduction

This Resource describes the muscle oxygen saturation (SmO2), which is the percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle.
The unit is percentage.
The smo2 Property is a read-only value that is provided by the server.

7.154.2 Example URI

/MuscleOxygenSaturationResURI

7.154.3 Resource type

The Resource Type is defined as: "oic.r.muscleoxygensaturation".

7.154.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Muscle Oxygen Saturation",
    "version": "2019-08-20",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
```

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```
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/MuscleOxygenSaturationResURI": {
      "get": {
        "description": "This Resource describes the muscle oxygen saturation (SmO2), which is the
percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle.\n The unit is
percentage.\n The smo2 Property is a read-only value that is provided by the server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.muscleoxygensaturation"
              ],
              "muscleoxygensaturation": 80.0
            },
            "schema": {
              "$ref": "#/definitions/MuscleOxygenSaturation"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "MuscleOxygenSaturation": {
      "properties": {
        "muscleoxygensaturation": {
          "description": "This Property describes the muscle oxygen saturation (SmO2), which is the
percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle. The unit is
percentage.",
          "type": "number",
          "minimum": 0,
          "maximum": 100,
          "readOnly": true
        },
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.muscleoxygensaturation"
            ],
            "type": "string"
          },
```

```
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": [
        "muscleoxygensaturation"
      ]
    }
  }
}
```

7.154.5 Property definition

Table 316 defines the Properties that are part of the "oic.r.muscleoxygensaturation" Resource Type.

Table 316 – The Property definitions of the Resource with type "rt" = "oic.r.muscleoxygensaturation".

Property name	Value type	Mandatory	Access mode	Description
muscleoxygensaturation	number	Yes	Read Only	This Property describes the muscle oxygen saturation (SmO2), which is the percentage of hemoglobin that is saturated with oxygen in the capillaries of a muscle. The unit is percentage.
rt	array: see schema	No	Read Only	The Resource Type.
n	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.154.6 CRUDN behaviour

Table 317 defines the CRUDN operations that are supported on the "oic.r.muscleoxygensaturation" Resource Type.

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Table 317 – The CRUDN operations of the Resource with type "rt" = "oic.r.muscleoxygensaturation".

Create	Read	Update	Delete	Notify
	get			observe

7.155 Body Composition Analyser Atomic Measurement

7.155.1 Introduction

This Resource describes the Properties associated with body composition analyser.
The Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI) (oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time (oic.r.time.stamp), and user id (oic.r.userid).

7.155.2 Example URI

/BodyCompositionAnalyserAMResURI

7.155.3 Resource type

The Resource Type is defined as: "oic.r.bodycompositionanalyser-am, oic.wk.atomicmeasurement".

7.155.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Body Composition Analyser Atomic Measurement",
    "version": "2019-03-22",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2016-2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/BodyCompositionAnalyserAMResURI?if=oic.if.b": {
      "get": {
        "description": "This Resource describes the Properties associated with body composition
analyser.\nThe Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI)
(oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body
soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
```

```
              "rep": {
                "weight": 80.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBMI",
              "rep": {
                "bmi": 20.0
              }
            },
            {
              "href": "/myHeight",
              "rep": {
                "height": 1.8,
                "units": "m"
              }
            },
            {
              "href": "/myBodyFat",
              "rep": {
                "bodyfat": 20.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBodyWater",
              "rep": {
                "bwater": 20.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBodySoftLeanMass",
              "rep": {
                "slm": 20.0,
                "units": "kg"
              }
            },
            {
              "href": "/myBodyFatFreeMass",
              "rep": {
                "ffm": 40.0,
                "units": "kg"
              }
            },
            {
              "href": "/myUserId",
              "rep": {
                "userid": "USER1"
              }
            },
            {
              "href": "/myTimeStamp",
              "rep": {
                "timestamp": "2018-11-09T12:15+08:00"
              }
            }
          ],
          "schema": {
            "$ref": "#/definitions/batch-retrieve"
          }
        }
      }
    }
  },
  "/BodyCompositionAnalyserAMResURI?if=oic.if.ll": {
    "get": {
      "description": "This Resource describes the Properties associated with body composition
analyser.\nThe Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI)
(oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body
soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time
```

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```
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": [
              {
                "href": "/myWeight",
                "rt": [
                  "oic.r.weight"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBMI",
                "rt": [
                  "oic.r.bmi"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myHeight",
                "rt": [
                  "oic.r.height"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyFat",
                "rt": [
                  "oic.r.body.fat"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyWater",
                "rt": [
                  "oic.r.body.water"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodySoftLeanMass",
                "rt": [
                  "oic.r.body.slm"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myBodyFatFreeMass",
```

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```
                "rt": [
                  "oic.r.body.ffm"
                ],
                "if": [
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ],
            "schema": {
              "$ref": "#/definitions/links"
            }
          }
        }
      }
    },
    "/BodyCompositionAnalyserAMResURI?if=oic.if.baseline": {
      "get": {
        "description": "This Resource describes the Properties associated with body composition
analyser.\nThe Resource is an Atomic Measurement of weight (oic.r.weight), body mass index (BMI)
(oic.r.bmi), height (oic.r.height), body fat (oic.r.body.fat), body water (oic.r.body.water), body
soft lean mass (oic.r.body.slm), body fat free mass (oic.r.body.ffm), observed time
(oic.r.time.stamp), and user id (oic.r.userid).",
        "parameters": [
          {
            "$ref": "#/parameters/interface-all"
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.bodycompositionanalyser-am",
                "oic.wk.atomicmeasurement"
              ],
              "if": [
                "oic.if.b",
                "oic.if.ll",
                "oic.if.baseline"
              ],
              "rts": [
                "oic.r.weight",
                "oic.r.bmi",
                "oic.r.height",
                "oic.r.body.fat",
                "oic.r.body.water",
                "oic.r.body.slm",
                "oic.r.body.ffm",
                "oic.r.userid",
                "oic.r.time.stamp"
              ],
```

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```
"rts-m": [
  "oic.r.weight",
  "oic.r.body.fat",
  "oic.r.height"
],
"links": [
  {
    "href": "/myWeight",
    "rt": [
      "oic.r.weight"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBMI",
    "rt": [
      "oic.r.bmi"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myHeight",
    "rt": [
      "oic.r.height"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyFat",
    "rt": [
      "oic.r.body.fat"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyWater",
    "rt": [
      "oic.r.body.water"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodySoftLeanMass",
    "rt": [
      "oic.r.body.slm"
    ],
    "if": [
      "oic.if.s",
      "oic.if.baseline"
    ]
  },
  {
    "href": "/myBodyFatFreeMass",
    "rt": [
      "oic.r.body.ffm"
    ],
    "if": [
```

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```
                  "oic.if.s",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myUserId",
                "rt": [
                  "oic.r.userid"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              },
              {
                "href": "/myTimeStamp",
                "rt": [
                  "oic.r.time.stamp"
                ],
                "if": [
                  "oic.if.r",
                  "oic.if.baseline"
                ]
              }
            ]
          },
          "schema": {
            "$ref": "#/definitions/baseline"
          }
        }
      }
    }
  }
},
"parameters": {
  "interface-all": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": [
      "oic.if.b",
      "oic.if.ll",
      "oic.if.baseline"
    ]
  }
},
"definitions": {
  "links": {
    "type": "array",
    "items": {
      "$ref": "#/definitions/oic.oic-link"
    }
  },
  "baseline": {
    "properties": {
      "rt": {
        "items": {
          "enum": [
            "oic.r.bodycompositionanalyser-am",
            "oic.wk.atomicmeasurement"
          ],
          "type": "string",
          "maxLength": 64
        },
        "minItems": 2,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "rts": {
        "description": "This contains all possible Resource Types for this Atomic Measurement.",
        "items": {
```

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```
            "enum": [
              "oic.r.weight",
              "oic.r.bmi",
              "oic.r.height",
              "oic.r.body.fat",
              "oic.r.body.water",
              "oic.r.body.slm",
              "oic.r.body.ffm",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "rts-m": {
          "description": "This contains all mandatory Resource Types for this Atomic Measurement.",
          "items": {
            "enum": [
              "oic.r.weight",
              "oic.r.body.fat",
              "oic.r.height"
            ],
            "type": "string",
            "maxLength": 64
          },
          "maxItems": 3,
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.b",
              "oic.if.ll",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 3,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "links": {
          "$ref": "#/definitions/links"
        }
      },
      "type": "object",
      "required": [
        "rt","if","links","rts","rts-m"
      ]
    },
    "batch-retrieve": {
```

```
      "minItems": 1,
      "items": {
        "properties": {
          "href": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
          },
          "rep": {
            "type": "object",
            "anyOf": [
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/WeightResURI.swagger.json#/definitions/W
eight"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BMIResURI.swagger.json#/definitions/BMI"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/HeightResURI.swagger.json#/definitions/H
eight"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatResURI.swagger.json#/definitions/
BodyFat"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyWaterResURI.swagger.json#/definition
s/BodyWater"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodySoftLeanMassResURI.swagger.json#/def
initions/BodySoftLeanMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/BodyFatFreeMassResURI.swagger.json#/defi
nitions/BodyFatFreeMass"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/UserIDResURI.swagger.json#/definitions/U
serID"
              },
              {
                "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/TimeStampResURI.swagger.json#/definition
s/TimeStamp"
              }
            ]
          }
        },
        "required": [
          "href",
          "rep"
        ],
        "type": "object"
      },
      "type": "array"
    },
    "oic.oic-link": {
      "properties": {
        "rt": {
          "description": "Resource Type of the target Resource",
          "items": {
            "enum": [
```

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```
              "oic.r.weight",
              "oic.r.bmi",
              "oic.r.height",
              "oic.r.body.fat",
              "oic.r.body.water",
              "oic.r.body.slm",
              "oic.r.body.ffm",
              "oic.r.time.stamp",
              "oic.r.userid"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "description": "The OCF Interface set supported by the target Resource",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "anchor": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/anchor"
        },
        "di": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/di"
        },
        "eps": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/eps"
        },
        "href": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/href"
        },
        "ins": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/ins"
        },
        "p": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/p"
        },
        "rel": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/rel_array"
        },
        "title": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
```

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```
schema.json#/definitions/title"
        },
        "type": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.links.properties.core-
schema.json#/definitions/type"
        }
      },
      "required": [
        "href",
        "rt",
        "if"
      ],
      "type": "object"
    }
  }
}
```

7.155.5 Property definition

Table 318 defines the Properties that are part of the "oic.r.bodycompositionanalyser-am, oic.wk.atomicmeasurement" Resource Type.

Table 318 – The Property definitions of the Resource with type "rt" = "oic.r.bodycompositionanalyser-am, oic.wk.atomicmeasurement".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read Only	
rts	array: see schema	Yes	Read Only	This contains all possible Resource Types for this Atomic Measurement.
rts-m	array: see schema	Yes	Read Only	This contains all mandatory Resource Types for this Atomic Measurement.
if	array: see schema	Yes	Read Only	The OCF Interface set supported by this Resource
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
links	multiple types: see schema	Yes	Read Write	
href	multiple types: see schema	Yes	Read Write	
rep	object: see schema	Yes	Read Write	
rt	array: see schema	Yes	Read Only	Resource Type of the target Resource
if	array: see schema	Yes	Read Only	The OCF Interface set supported by the target Resource
anchor	multiple types: see schema	No	Read Write	
di	multiple types: see schema	No	Read Write	

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eps	multiple types: see schema	No	Read Write	
href	multiple types: see schema	Yes	Read Write	
ins	multiple types: see schema	No	Read Write	
p	multiple types: see schema	No	Read Write	
rel	multiple types: see schema	No	Read Write	
title	multiple types: see schema	No	Read Write	
type	multiple types: see schema	No	Read Write	

7.155.6 CRUDN behaviour

Table 319 defines the CRUDN operations that are supported on the "oic.r.bodycompositionanalyser-am, oic.wk.atomicmeasurement" Resource Type.

Table 319 – The CRUDN operations of the Resource with type "rt" = "oic.r.bodycompositionanalyser-am, oic.wk.atomicmeasurement".

Create	Read	Update	Delete	Notify
	get			observe

7.156 Fault Interrupter Switch

7.156.1 Introduction

This Resource describes a fault interrupter switch (on/off/faulted).
The Property "state" is an enum.
A state of "on" means that the switch is on.
A state of "off" means that the switch is off.
A state of "faulted" means the switch is faulted, in such a state an UPDATE is not possible.

7.156.2 Example URI

/FaultSwitchResURI

7.156.3 Resource type

The Resource Type is defined as: "oic.r.switch.fault".

7.156.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Fault Interrupter Switch",
    "version": "20191114",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
```

```
    "/FaultSwitchResURI" : {
      "get": {
        "description": "This Resource describes a fault interrupter switch (on/off/faulted).\nThe
Property \"state\" is an enum.\nA state of \"on\" means that the switch is on.\nA state of \"off\"
means that the switch is off.\nA state of \"faulted\" means the switch is faulted, in such a state
an UPDATE is not possible.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.switch.fault"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "state": "off"
                },
              "schema": { "$ref": "#/definitions/FaultSwitch" }
            }
        }
      },
      "post": {
        "description": "Setting a fault interrupter to a faulted state requires a manual human
intervention, thus it is not allowed in an UPDATE. When in a faulted state it is not possible to
reset to a non-faulted state without also manual human intervention.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/FaultSwitchUpdate" },
            "x-example":
              {
                "state": "on"
              }
          }
        ],
        "responses": {
          "200": {
            "description" : "Success path response as would be provided for an UPDATE as shown in
the example for \"post\".",
            "x-example":
              {
                "state": "on"
              },
            "schema": { "$ref": "#/definitions/FaultSwitch" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "FaultSwitch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.switch.fault"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "state": {
          "description": "The status of the switch.",
          "enum": ["on", "off", "faulted"],
          "type":"string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["state"]
    },
    "FaultSwitchUpdate" : {
      "properties": {
        "state": {
          "description": "The status of the switch.",
          "enum": ["on", "off"],
          "type":"string"
        }
      },
      "type": "object",
      "required": ["state"]
    }
  }
}
```

7.156.5 Property definition

Table 320 defines the Properties that are part of the "oic.r.switch.fault" Resource Type.

Table 320 – The Property definitions of the Resource with type "rt" = "oic.r.switch.fault".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
state	string	Yes	Read Write	The status of the switch.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	

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if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
state	string	Yes	Read Write	The status of the switch.

7.156.6 CRUDN behaviour

Table 321 defines the CRUDN operations that are supported on the "oic.r.switch.fault" Resource Type.

Table 321 – The CRUDN operations of the Resource with type "rt" = "oic.r.switch.fault".

Create	Read	Update	Delete	Notify
	get	post		observe

7.157 HVAC Capacity

7.157.1 Introduction

This Resource describes the capacity (heating or cooling) of a HVAC system.
"capacity" is a number in units of kW (kilowatts).
To convert from kW to other units that may be commonly used in certain geographic locales the following conversions should be applied:
- to convert to BTU/hr: BTU/hr = 3412.142 * kW
- to convert to ton: ton = kW/3.5168525

7.157.2 Example URI

/HVACCapacityResURI

7.157.3 Resource type

The Resource Type is defined as: "oic.r.hvac.capacity".

7.157.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "HVAC Capacity",
    "version": "20190724",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/HVACCapacityResURI" : {
      "get": {
        "description": "This Resource describes the capacity (heating or cooling) of a HVAC
system.\n \"capacity\" is a number in units of kW (kilowatts).\n To convert from kW to other units
that may be commonly used in certain geographic locales the following conversions should be
applied:\n - to convert to BTU/hr: BTU/hr = 3412.142 * kW\n - to convert to ton: ton =
kW/3.5168525",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current capacity.",
```

```
              "x-example":
                {
                  "rt": ["oic.r.hvac.capacity"],
                  "if": ["oic.if.r", "oic.if.baseline"],
                  "capacity": 2.5
                },
              "schema": { "$ref": "#/definitions/capacity" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "capacity" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.hvac.capacity"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "capacity": {
          "description": "The rated capacity for the Device.",
          "minimum": 0,
          "exclusiveMinimum": true,
          "readOnly": true,
          "type": "number"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["capacity"]
    }
  }
```

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```
}
```

7.157.5 Property definition

Table 322 defines the Properties that are part of the "oic.r.hvac.capacity" Resource Type.

Table 322 – The Property definitions of the Resource with type "rt" = "oic.r.hvac.capacity".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
capacity	number	Yes	Read Only	The rated capacity for the Device.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.157.6 CRUDN behaviour

Table 323 defines the CRUDN operations that are supported on the "oic.r.hvac.capacity" Resource Type.

Table 323 – The CRUDN operations of the Resource with type "rt" = "oic.r.hvac.capacity".

Create	Read	Update	Delete	Notify
	get			observe

7.158 Media Audio Resource Type

7.158.1 Introduction

This OCF Resource specifies the audio media types that an OCF Device supports.

7.158.2 Example URI

/MediaAudioResURI

7.158.3 Resource type

The Resource Type is defined as: "oic.r.media.audio".

7.158.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Audio Resource Type",
    "version": "2019-11-27",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaAudioResURI" : {
```

```
      "get": {
        "description": "This OCF Resource specifies the audio media types that an OCF Device
supports.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the audio information for the specified or the current
media.",
            "x-example": {
              "rt": ["oic.r.media.audio"],
              "id": "unique_example_id",
              "mediacore": {
                "title": "Song 1",
                "description": "Long user-friendly synopsis of Song 1",
                "mimetype": "audio/mpeg3",
                "mediafile": "file://example/url/Song1.mp3",
                "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory -
Explicit Content"}],
                "identificationnumber": "ISSN:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "mediaartwork": [
                  {
                    "rt": ["oic.r.icon"],
                    "mimetype": "image/png",
                    "width": 256,
                    "height": 256,
                    "media": "file://example/url/song1.png"
                  }
                ],
                "copyright": "Copyright notice by the copyright holder for Song 1"
              },
              "artists": [
                "Artist 1",
                "Artist 2"
              ],
              "album": "Album Title 1",
              "albumartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/album1.png"
                }
              ],
              "sdp": [
                "m=audio 2 RTP/AVP 97",
                "a=rtpmap:97 MP4A-LATM/90000"
              ],
              "duration": "P0Y0M0DT0H4M27S",
              "tracknumber": 2,
              "producers": [
                "Producer 1",
                "Producer 2"
              ],
              "composers": [
                "Composer 1",
                "Composer 2"
              ],
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/MediaAudio"}
          }
        }
      },
      "post": {
        "description": "Sets the Media Audio properties.",
        "parameters": [
```

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```
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "mediacore": {
                "title": "Song 1",
                "description": "Long user-friendly synopsis of Song 1",
                "mimetype": "audio/mpeg3",
                "mediafile": "file://example/url/Song1.mp3",
                "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory -
Explicit Content"}],
                "identificationnumber": "ISSN:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "mediaartwork": [
                  {
                    "mimetype": "image/png",
                    "width": 256,
                    "height": 256,
                    "media": "file://example/url/song1.png"
                  }
                ],
                "copyright": "Copyright notice by the copyright holder for Song 1"
              },
              "artists": [
                "Artist 1",
                "Artist 2"
              ],
              "album": "Album Title 1",
              "albumartwork": [
                {
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/album1.png"
                }
              ],
              "sdp": [
                "m=audio 2 RTP/AVP 97",
                "a=rtpmap:97 MP4A-LATM/90000"
              ],
              "duration": "P0Y0M0DT0H4M27S",
              "tracknumber": 2,
              "producers": [
                "Producer 1",
                "Producer 2"
              ],
              "composers": [
                "Composer 1",
                "Composer 2"
              ],
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/MediaAudioUpdate"}
          }
        ],
        "responses": {
          "200": {
            "description" : "Sets the audio information for the specified or the current media.",
            "x-example": {
              "mediacore": {
                "title": "Song 1",
                "description": "Long user-friendly synopsis of Song 1",
                "mimetype": "audio/mpeg3",
                "mediafile": "file://example/url/Song1.mp3",
                "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory -
Explicit Content"}],
```

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```
              "identificationnumber": "ISSN:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/song1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for Song 1"
            },
            "artists": [
              "Artist 1",
              "Artist 2"
            ],
            "album": "Album Title 1",
            "albumartwork": [
              {
                "rt": ["oic.r.icon"],
                "mimetype": "image/png",
                "width": 256,
                "height": 256,
                "media": "file://example/url/album1.png"
              }
            ],
            "sdp": [
              "m=audio 2 RTP/AVP 97",
              "a=rtpmap:97 MP4A-LATM/90000"
            ],
            "duration": "P0Y0M0DT0H4M27S",
            "tracknumber": 2,
            "producers": [
              "Producer 1",
              "Producer 2"
            ],
            "composers": [
              "Composer 1",
              "Composer 2"
            ],
            "language": "en"
          },
          "schema": {"$ref": "#/definitions/MediaAudioUpdate"}
        }
      }
    }
  }
},
"parameters": {
  "interface-r" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw", "oic.if.baseline"]
  },
  "interface-rw" : {
    "in" : "query",
    "name" : "if",
    "type" : "string",
    "enum" : ["oic.if.rw"]
  }
},
"definitions": {
  "MediaAudio" : {
    "properties": {
      "rt": {
        "description": "The Resource Type of Media Audio",
        "items": {
          "enum": ["oic.r.media.audio"],
          "type": "string"
        },
```

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```
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "artists" : {
          "description": "List of artists that recorded the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "album" : {
          "description": "Which album the song and picture belong to (if applicable)",
          "type": "string"
        },
        "albumartwork" : {
          "description": "The array of icons that are used as the album artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "tracknumber" : {
          "description": "The track number from the album",
          "type": "integer"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "duration": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration",
          "description": "Duration is the total length of the media audio with format pattern
according to ISO 8601 duration. For example, P0Y0M0DT0H4M27S represents a duration of 4 minutes, and
27 seconds."
        },
        "producers" : {
          "description": "List of producers that produced the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "composers" : {
          "description": "List of composers that wrote the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
```

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```
          "description": "Current language of the audio media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": ["oic.if.rw","oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    },
    "MediaAudioUpdate" : {
      "properties": {
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "artists" : {
          "description": "List of artists that recorded the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "album" : {
          "description": "Which album the song and picture belong to (if applicable)",
          "type": "string"
        },
        "albumartwork" : {
          "description": "The array of icons that are used as the album artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "tracknumber" : {
          "description": "The track number from the album",
          "type": "integer"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "duration": {
```

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```
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration",
          "description": "Duration is the total length of the media audio with format pattern
according to ISO 8601 duration. For example, P0Y0M0DT0H4M27S represents a duration of 4 minutes, and
27 seconds."
        },
        "producers" : {
          "description": "List of producers that produced the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "composers" : {
          "description": "List of composers that wrote the song",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the audio media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    }
  }
}
```

7.158.5 Property definition

Table 324 defines the Properties that are part of the "oic.r.media.audio" Resource Type.

Table 324 – The Property definitions of the Resource with type "rt" = "oic.r.media.audio".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Media Audio
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types
artists	array: see schema	No	Read Write	List of artists that recorded the song
album	string	No	Read Write	Which album the song and picture belong to (if applicable)
albumartwork	array: see schema	No	Read Write	The array of icons that are used as the album artwork.
tracknumber	integer	No	Read Write	The track number from the album

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sdp	array: see schema	No	Read Write	Array of strings, a string for each Session Description Protocol syntax.
duration	multiple types: see schema	No	Read Write	Duration is the total length of the media audio with format pattern according to ISO 8601 duration. For example, P0Y0M0DT0H4M27S represents a duration of 4 minutes, and 27 seconds.
producers	array: see schema	No	Read Write	List of producers that produced the song
composers	array: see schema	No	Read Write	List of composers that wrote the song
language	multiple types: see schema	No	Read Write	Current language of the audio media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
artists	array: see schema	No	Read Write	List of artists that recorded the song
album	string	No	Read Write	Which album the song and picture belong to (if applicable)
albumartwork	array: see schema	No	Read Write	The array of icons that are used as the album artwork.
tracknumber	integer	No	Read Write	The track number from the album
sdp	array: see schema	No	Read Write	Array of strings, a string for each Session Description Protocol syntax.
duration	multiple types: see schema	No	Read Write	Duration is the total length of the media audio with format pattern according to ISO 8601 duration. For example, P0Y0M0DT0H4M27S represents a duration of 4

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				minutes, and 27 seconds.
producers	array: see schema	No	Read Write	List of producers that produced the song
composers	array: see schema	No	Read Write	List of composers that wrote the song
language	multiple types: see schema	No	Read Write	Current language of the audio media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	

7.158.6 CRUDN behaviour

Table 325 defines the CRUDN operations that are supported on the "oic.r.media.audio" Resource Type.

Table 325 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.audio".

Create	Read	Update	Delete	Notify
	get	post		observe

7.159 Media Core Resource Type

7.159.1 Introduction

This Resource specifies the Properties associated with all media types that a Device may support.

7.159.2 Example URI

/MediaCoreResURI

7.159.3 Resource type

The Resource Type is defined as: "oic.r.media.core".

7.159.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Core Resource Type",
    "version": "2021-02-01",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020-21 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaCoreResURI" : {
      "get": {
        "description": "This Resource specifies the Properties associated with all media types that
a Device may support.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
```

```
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the core information for the specified or the current
media.",
            "x-example": {
              "rt": ["oic.r.media.core"],
              "id": "unique_example_id",
              "title": "PDF File 1",
              "shortdescription": "Short description for PDF File 1",
              "description": "Long user-friendly synopsis of PDF File 1",
              "mimetype": "application/pdf",
              "mediafile": "file://example/url/PDF_File1.pdf",
              "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
              "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory - Explicit
Content"}],
              "identificationnumber": "ISSN:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/media1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for PDF File 1"
            },
            "schema": {"$ref": "#/definitions/MediaCore"}
          }
        }
      },
      "post": {
        "description": "Sets the Media Core properties.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "title": "New PDF File 1",
              "shortdescription": "New short description for PDF File 1",
              "description": "Long user-friendly synopsis of PDF File 1",
              "mimetype": "application/pdf",
              "mediafile": "file://example/url/PDF_File1.pdf",
              "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
              "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory - Explicit
Content"}],
              "identificationnumber": "ISSN:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
                {
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/media1.png"
                }
              ]
            },
            "schema": {"$ref": "#/definitions/MediaCoreUpdate"}
          }
        ],
        "responses": {
          "200": {
            "description" : "Sets the core information for the specified or the current media.",
            "x-example": {
              "title": "PDF File 1",
              "shortdescription": "New short description for PDF File 1",
```

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```
              "description": "Long user-friendly synopsis of PDF File 1",
              "mimetype": "application/pdf",
              "mediafile": "file://example/url/PDF_File1.pdf",
              "genres": [{"category": "Music", "subcategory": "Rock"}, {"category": "Music",
"subcategory": "Pop"}],
              "ratinginfo": [{"ratingorganization": "none", "rating": "Parental Advisory - Explicit
Content"}],
              "identificationnumber": "ISSN:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/media1.png"
                }
              ]
            },
            "schema": {"$ref": "#/definitions/MediaCoreUpdate"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw"]
    }
  },
  "definitions": {
    "MediaCore" : {
      "properties": {
        "rt": {
          "description": "The Resource Type of Media Core",
          "items": {
            "enum": ["oic.r.media.core"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "title" : {
          "description": "Specifies the Short user-friendly name of the media.",
          "type": "string"
        },
        "shortdescription" : {
          "description": "Specifies a short description that is associated with the media (e.g. a
tag line).",
          "type": "string"
        },
        "description" : {
          "description": "Specifies the Long user-friendly synopsis of the media content.",
          "type": "string"
        },
        "mimetype" : {
          "description": "Specifies the Mime Type for the media content.",
          "type": "string"
        },
        "mediafile" : {
          "description": "uri of the Media File for media content. It can be specified as a Relative
```

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```
Reference or fully-qualified URI.",
          "format": "uri",
          "maxLength": 256,
          "type": "string"
        },
        "genres" : {
          "description": "Genres for media content.",
          "items": {
            "$ref": "#/definitions/MediaGenre"
          },
          "minItems": 1,
          "type": "array"
        },
        "ratinginfo" : {
          "description": "The rating information which includes the rating organization and
rating.",
          "items": {
            "properties": {
              "rating": {
                "description": "A category of artistic composition, as in music or literature,
characterized by similarities in form, style, or subject matter. (For instance, the type of song,
e.g. speech, rock, pop)",
                "type": "string"
              },
              "ratingorganization": {
                "description": "These are media content rating organization.",
                "type": "string"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "identificationnumber" : {
          "description": "Unique identification number for media content (ISSN:
International_Standard_Serial_Number)",
          "type": "string"
        },
        "datetime" : {
          "description": "This is date, time, and timezone of the media content was created using
RFC3339 date-time format.\n\r (e.g: '2018-06-23T20:22:59Z' - Date+Time+Timezone'UTC' or '2018-06-
23T20:22:59-08:00' - Date+Time+Timezone'PST')",
          "format": "date-time",
          "type": "string"
        },
        "mediaartwork" : {
          "description": "The array of icons that are used as the media artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "copyright" : {
          "description": "Copyright notice by the copyright holder.",
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
```

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```
            "enum": ["oic.if.rw","oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["title", "mimetype", "mediafile"]
    },
    "MediaCoreUpdate" : {
      "properties": {
        "title" : {
          "description": "Specifies the Short user-friendly name of the media.",
          "type": "string"
        },
        "shortdescription" : {
          "description": "Specifies a short description that is associated with the media (e.g. a
tag line).",
          "type": "string"
        },
        "description" : {
          "description": "Specifies the Long user-friendly synopsis of the media content.",
          "type": "string"
        },
        "mimetype" : {
          "description": "Specifies the Mime Type for the media content.",
          "type": "string"
        },
        "mediafile" : {
          "description": "uri of the Media File for media content. It can be specified as a Relative
Reference or fully-qualified URI.",
          "format": "uri",
          "maxLength": 256,
          "type": "string"
        },
        "genres" : {
          "description": "Genres for media content.",
          "items": {
            "$ref": "#/definitions/MediaGenre"
          },
          "minItems": 1,
          "type": "array"
        },
        "ratinginfo" : {
          "description": "The rating information which includes the rating organization and
rating.",
          "items": {
            "properties": {
              "rating": {
                "description": "A category of artistic composition, as in music or literature,
characterized by similarities in form, style, or subject matter. (For instance, the type of song,
e.g. speech, rock, pop)",
                "type": "string"
              },
              "ratingorganization": {
                "description": "These are media content rating organization.",
                "type": "string"
              }
            },
            "type": "object"
          },
          "type": "array"
        },
        "identificationnumber" : {
          "description": "Unique identification number for media content (ISSN:
International_Standard_Serial_Number)",
          "type": "string"
        },
        "datetime" : {
```

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```
          "description": "This is date, time, and timezone of the media content was created using
RFC3339 date-time format.\n\r (e.g: '2018-06-23T20:22:59Z' - Date+Time+Timezone'UTC' or '2018-06-
23T20:22:59-08:00' - Date+Time+Timezone'PST')",
          "format": "date-time",
          "type": "string"
        },
        "mediaartwork" : {
          "description": "The array of icons that are used as the media artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type": "object"
    },
    "MediaGenre": {
      "properties": {
        "category": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.genre.properties-
schema.json#/definitions/category",
          "description": "Genre Category for Media Information."
        },
        "subcategory": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.genre.properties-
schema.json#/definitions/subcategory",
          "description": "Genre Sub-Category for Media Information."
        }
      },
      "type": "object",
      "required": ["category"]
    }
  }
}
```

7.159.5 Property definition

Table 326 defines the Properties that are part of the "oic.r.media.core" Resource Type.

Table 326 – The Property definitions of the Resource with type "rt" = "oic.r.media.core".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Media Core
title	string	Yes	Read Write	Specifies the Short user-friendly name of the media.
shortdescription	string	No	Read Write	Specifies a short description that is associated with the media (e.g. a tag line).
description	string	No	Read Write	Specifies the Long user-friendly synopsis of the media content.
mimetype	string	Yes	Read Write	Specifies the Mime Type for the media content.
mediafile	string	Yes	Read Write	uri of the Media File for media content. It can be specified as a Relative Reference or fully-qualified URI.

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genres	array: see schema	No	Read Write	Genres for media content.
ratinginfo	array: see schema	No	Read Write	The rating information which includes the rating organization and rating.
identificationnumber	string	No	Read Write	Unique identification number for media content (ISSN: International_Standard_Serial_Number)
datetime	string	No	Read Write	This is date, time, and timezone of the media content was created using RFC3339 date-time format. (e.g: '2018-06-23T20:22:59Z' - Date+Time+Timezone'UTC' or '2018-06-23T20:22:59-08:00' - Date+Time+Timezone'PST')
mediaartwork	array: see schema	No	Read Write	The array of icons that are used as the media artwork.
copyright	string	No	Read Only	Copyright notice by the copyright holder.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
title	string		Read Write	Specifies the Short user-friendly name of the media.
shortdescription	string		Read Write	Specifies a short description that is associated with the media (e.g. a tag line).
description	string		Read Write	Specifies the Long user-friendly synopsis of the media content.
mimetype	string		Read Write	Specifies the Mime Type for the media content.
mediafile	string		Read Write	uri of the Media File for media content. It can be specified as a Relative Reference or fully-qualified URI.
genres	array: see schema		Read Write	Genres for media content.
ratinginfo	array: see schema		Read Write	The rating information which includes the rating organization and rating.
identificationnumber	string		Read Write	Unique identification number for media content (ISSN: International_Standard_Serial_Number)
datetime	string		Read Write	This is date, time, and timezone of the media content was created using RFC3339 date-time format. (e.g: '2018-06-23T20:22:59Z' - Date+Time+Timezone'UTC' or '2018-06-23T20:22:59-08:00' - Date+Time+Timezone'PST')
mediaartwork	array: see schema		Read Write	The array of icons that are used as the media artwork.
n	multiple types: see schema		Read Write	

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category	multiple types: see schema	Yes	Read Write	Genre Category for Media Information.
subcategory	multiple types: see schema	No	Read Write	Genre Sub-Category for Media Information.

7.159.6 CRUDN behaviour

Table 327 defines the CRUDN operations that are supported on the "oic.r.media.core" Resource Type.

Table 327 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.core".

Create	Read	Update	Delete	Notify
	get	post		observe

7.160 Media Image Resource Type

7.160.1 Introduction

This OCF Resource specifies the image media types that an OCF Device supports.

7.160.2 Example URI

/MediaImageResURI

7.160.3 Resource type

The Resource Type is defined as: "oic.r.media.image".

7.160.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Image Resource Type",
    "version": "2019-11-27",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaImageResURI" : {
      "get": {
        "description": "This OCF Resource specifies the image media types that an OCF Device
supports.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the image information for the specified or the current
media.",
            "x-example": {
              "rt": ["oic.r.media.image"],
              "id": "unique_example_id",
              "mediacore": {
                "title": "Image 1",
                "description": "Long user-friendly synopsis of Image 1",
                "mimetype": "image/png",
                "mediafile": "file://example/url/Image1.png",
                "genres": [{"category": "Arts", "subcategory": "Culture"}, {"category": "Arts",
```

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```
"subcategory": "Religion"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "General"}],
                "identificationnumber": "ISSN:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "copyright": "Copyright notice by the copyright holder for Image 1"
              },
              "artists": [ "Artist 1", "Artist 2" ],
              "album": "Album Title 1",
              "albumartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/album1.png"
                }
              ],
              "width": 2460,
              "height": 1667,
              "size": 496.765,
              "resolution": 200,
              "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
              "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -62.1}
            },
            "schema": {"$ref": "#/definitions/MediaImage"}
          }
        }
      },
      "post": {
        "description": "Sets the Media Image properties.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "mediacore": {
                "title": "Image 1",
                "description": "Long user-friendly synopsis of Image 1",
                "mimetype": "image/png",
                "mediafile": "file://example/url/Image1.png",
                "genres": [{"category": "Arts", "subcategory": "Culture"}, {"category": "Arts",
"subcategory": "Religion"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "General"}],
                "identificationnumber": "ISSN:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "copyright": "Copyright notice by the copyright holder for Image 1"
              },
              "artists": [ "Artist 1", "Artist 2" ],
              "album": "Album Title 1",
              "albumartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/album1.png"
                }
              ],
              "width": 2460,
              "height": 1667,
              "size": 496.765,
              "resolution": 200,
              "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
              "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -62.1}
            },
            "schema": {"$ref": "#/definitions/MediaImageUpdate"}
          }
        ],
        "responses": {
          "200": {
```


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```
            "description" : "Sets the image information for the specified or the current media.",
            "x-example": {
              "mediacore": {
                "title": "Image 1",
                "description": "Long user-friendly synopsis of Image 1",
                "mimetype": "image/png",
                "mediafile": "file://example/url/Image1.png",
                "genres": [{"category": "Arts", "subcategory": "Culture"}, {"category": "Arts",
"subcategory": "Religion"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "General"}],
                "identificationnumber": "ISSN:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "copyright": "Copyright notice by the copyright holder for Image 1"
              },
              "artists": [ "Artist 1", "Artist 2" ],
              "album": "Album Title 1",
              "albumartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/album1.png"
                }
              ],
              "width": 2460,
              "height": 1667,
              "size": 496.765,
              "resolution": 200,
              "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
              "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -62.1}
            },
            "schema": {"$ref": "#/definitions/MediaImageUpdate"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw"]
    }
  },
  "definitions": {
    "MediaImage" : {
      "properties": {
        "rt": {
          "description": "The Resource Type of Media Image",
          "items": {
            "enum": ["oic.r.media.image"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
```

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```
        "artists" : {
          "description": "List of artists",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "album" : {
          "description": "Which album the picture belongs to (if applicable).",
          "type": "string"
        },
        "albumartwork" : {
          "description": "The array of icons that are used as the album artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "width" : {
          "description": "The resolution of the image",
          "type": "integer"
        },
        "height" : {
          "description": "The resolution of the image",
          "type": "integer"
        },
        "size" : {
          "description": "The size of the image in KB - Kilo-Bytes",
          "type": "number"
        },
        "resolution" : {
          "description": "The resolution of the image in pixels",
          "type": "integer"
        },
        "location" : {
          "description": "Location is the user-friendly string of the geographic location of the
image.",
          "type": "string"
        },
        "geolocation" : {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GeolocationResURI.swagger.json#/definiti
ons/Geolocation"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    },
```

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```
    "MediaImageUpdate" : {
      "properties": {
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "artists" : {
          "description": "List of artists",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "album" : {
          "description": "Which album the picture belongs to (if applicable).",
          "type": "string"
        },
        "albumartwork" : {
          "description": "The array of icons that are used as the album artwork.",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core-
extensions/swagger2.0/oic.r.icon.swagger.json#/definitions/Icon"
          },
          "minItems": 1,
          "type": "array"
        },
        "width" : {
          "description": "The resolution of the image",
          "type": "integer"
        },
        "height" : {
          "description": "The resolution of the image",
          "type": "integer"
        },
        "size" : {
          "description": "The size of the image in KB - Kilo-Bytes",
          "type": "number"
        },
        "resolution" : {
          "description": "The resolution of the image in pixels",
          "type": "integer"
        },
        "location" : {
          "description": "Location is the user-friendly string of the geographic location of the
image.",
          "type": "string"
        },
        "geolocation" : {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GeolocationResURI.swagger.json#/definiti
ons/Geolocation"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    }
  }
}
```

7.160.5 Property definition

Table 328 defines the Properties that are part of the "oic.r.media.image" Resource Type.

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Table 328 – The Property definitions of the Resource with type "rt" = "oic.r.media.image".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Media Image
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
artists	array: see schema	No	Read Write	List of artists
album	string	No	Read Write	Which album the picture belongs to (if applicable).
albumartwork	array: see schema	No	Read Write	The array of icons that are used as the album artwork.
width	integer	No	Read Write	The resolution of the image
height	integer	No	Read Write	The resolution of the image
size	number	No	Read Write	The size of the image in KB - Kilo-Bytes
resolution	integer	No	Read Write	The resolution of the image in pixels
location	string	No	Read Write	Location is the user-friendly string of the geographic location of the image.
geolocation	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
artists	array: see schema	No	Read Write	List of artists
album	string	No	Read Write	Which album the picture belongs to (if applicable).
albumartwork	array: see schema	No	Read Write	The array of icons that are used as the album artwork.
width	integer	No	Read Write	The resolution of the image
height	integer	No	Read Write	The resolution of the image

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size	number	No	Read Write	The size of the image in KB - Kilo-Bytes
resolution	integer	No	Read Write	The resolution of the image in pixels
location	string	No	Read Write	Location is the user-friendly string of the geographic location of the image.
geolocation	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	

7.160.6 CRUDN behaviour

Table 329 defines the CRUDN operations that are supported on the "oic.r.media.image" Resource Type.

Table 329 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.image".

Create	Read	Update	Delete	Notify
	get	post		observe

7.161 Media Text Resource Type

7.161.1 Introduction

This OCF Resource specifies the text media types that an OCF Device supports.

7.161.2 Example URI

/MediaTextResURI

7.161.3 Resource type

The Resource Type is defined as: "oic.r.media.text".

7.161.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Text Resource Type",
    "version": "2019-11-27",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaTextResURI" : {
      "get": {
        "description": "This OCF Resource specifies the text media types that an OCF Device
supports.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
```

```
            "description" : "Retrieves the text information for the specified or the current
media.",
            "x-example": {
              "rt": ["oic.r.media.text"],
              "id": "unique_example_id",
              "mediacore": {
                "title": "Book 1",
                "description": "Long user-friendly synopsis of Book 1",
                "mimetype": "text",
                "mediafile": "file://example/url/Book1.pdf",
                "genres": [{"category": "Sports", "subcategory": "Other"}, {"category": "Youth",
"subcategory": "Other"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "adult-content"}],
                "identificationnumber": "ISBN: 978-3-16-148410-0",
                "datetime": "2018-06-23T20:22:59-08:00",
                "mediaartwork": [
                  {
                    "rt": ["oic.r.icon"],
                    "mimetype": "image/png",
                    "width": 256,
                    "height": 256,
                    "media": "file://example/url/book1.png"
                  }
                ],
                "copyright": "Copyright notice by the copyright holder for Book 1"
              },
              "sdp": [
                "m=text 49156 RTP/AVP 100 101",
                "a=rtpmap:100 1140/1000",
                "a=rtpmap:101 red/1000",
                "a=fmtp:101 100/100/100"
              ],
              "authors": [
                "Author 1",
                "Author 2"
              ],
              "publishers": [
                "Publisher 1",
                "Publisher 2"
              ],
              "series": [
                "Series 1",
                "Series 2"
              ],
              "totalchapters": 28,
              "totalpages": 499,
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/MediaText"}
          }
        }
      },
      "post": {
        "description": "Sets the Media Text properties.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "mediacore": {
                "title": "Book 1",
                "description": "Long user-friendly synopsis of Book 1",
                "mimetype": "text",
                "mediafile": "file://example/url/Book1.pdf",
                "genres": [{"category": "Sports", "subcategory": "Other"}, {"category": "Youth",
"subcategory": "Other"}],
                "ratinginfo": [{"ratingorganization": "none", "rating": "adult-content"}],
                "identificationnumber": "ISBN: 978-3-16-148410-0",
                "datetime": "2018-06-23T20:22:59-08:00",
                "mediaartwork": [
```

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```
                {
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/book1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for Book 1"
            },
            "sdp": [
              "m=text 49156 RTP/AVP 100 101",
              "a=rtpmap:100 1140/1000",
              "a=rtpmap:101 red/1000",
              "a=fmtp:101 100/100/100"
            ],
            "authors": [
              "Author 1",
              "Author 2"
            ],
            "publishers": [
              "Publisher 1",
              "Publisher 2"
            ],
            "series": [
              "Series 1",
              "Series 2"
            ],
            "totalchapters": 28,
            "totalpages": 499,
            "language": "en"
          },
          "schema": {"$ref": "#/definitions/MediaTextUpdate"}
        }
      ],
      "responses": {
        "200": {
          "description" : "Sets the text information for the specified or the current media.",
          "x-example": {
            "mediacore": {
              "title": "Book 1",
              "description": "Long user-friendly synopsis of Book 1",
              "mimetype": "text",
              "mediafile": "file://example/url/Book1.pdf",
              "genres": [{"category": "Sports", "subcategory": "Other"}, {"category": "Youth",
"subcategory": "Other"}],
              "ratinginfo": [{"ratingorganization": "none", "rating": "adult-content"}],
              "identificationnumber": "ISBN: 978-3-16-148410-0",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/book1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for Book 1"
            },
            "sdp": [
              "m=text 49156 RTP/AVP 100 101",
              "a=rtpmap:100 1140/1000",
              "a=rtpmap:101 red/1000",
              "a=fmtp:101 100/100/100"
            ],
            "authors": [
              "Author 1",
              "Author 2"
            ],
            "publishers": [
              "Publisher 1",
              "Publisher 2"
```


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```
              ],
              "series": [
                "Series 1",
                "Series 2"
              ],
              "totalchapters": 28,
              "totalpages": 499,
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/MediaTextUpdate"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw"]
    }
  },
  "definitions": {
    "MediaText" : {
      "properties": {
        "rt": {
          "description": "The Resource Type of Media Text",
          "items": {
            "enum": ["oic.r.media.text"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "authors" : {
          "description": "List of authors that wrote the text",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "publishers" : {
          "description": "List of publishers that released the text",
          "items": {
            "type": "string"
          },
```

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```
          "minItems": 1,
          "type": "array"
        },
        "series" : {
          "description": "List of series for the text",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "totalchapters" : {
          "description": "The total number of chapters in the text",
          "type": "integer"
        },
        "totalpages" : {
          "description": "The total number of pages in the text",
          "type": "integer"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the text media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    },
    "MediaTextUpdate" : {
      "properties": {
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "authors" : {
          "description": "List of authors that wrote the text",
          "items": {
            "type": "string"
```

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```
          },
          "minItems": 1,
          "type": "array"
        },
        "publishers" : {
          "description": "List of publishers that released the text",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "series" : {
          "description": "List of series for the text",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "totalchapters" : {
          "description": "The total number of chapters in the text",
          "type": "integer"
        },
        "totalpages" : {
          "description": "The total number of pages in the text",
          "type": "integer"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the text media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    }
  }
}
```

7.161.5 Property definition

Table 330 defines the Properties that are part of the "oic.r.media.text" Resource Type.

Table 330 – The Property definitions of the Resource with type "rt" = "oic.r.media.text".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Media Text
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
sdp	array: see schema	No	Read Write	Array of strings, a string for each Session Description Protocol syntax.
authors	array: see schema	No	Read Write	List of authors that wrote the text

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publishers	array: see schema	No	Read Write	List of publishers that released the text
series	array: see schema	No	Read Write	List of series for the text
totalchapters	integer	No	Read Write	The total number of chapters in the text
totalpages	integer	No	Read Write	The total number of pages in the text
language	multiple types: see schema	No	Read Write	Current language of the text media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
sdp	array: see schema	No	Read Write	Array of strings, a string for each Session Description Protocol syntax.
authors	array: see schema	No	Read Write	List of authors that wrote the text
publishers	array: see schema	No	Read Write	List of publishers that released the text
series	array: see schema	No	Read Write	List of series for the text
totalchapters	integer	No	Read Write	The total number of chapters in the text
totalpages	integer	No	Read Write	The total number of pages in the text
language	multiple types: see schema	No	Read Write	Current language of the text media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	

7.161.6 CRUDN behaviour

Table 331 defines the CRUDN operations that are supported on the "oic.r.media.text" Resource Type.

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Table 331 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.text".

Create	Read	Update	Delete	Notify
	get	post		observe

7.162 Media Video Resource Type

7.162.1 Introduction

This OCF Resource specifies the video media types that an OCF Device supports.

7.162.2 Example URI

/MediaVideoResURI

7.162.3 Resource type

The Resource Type is defined as: "oic.r.media.video".

7.162.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Media Video Resource Type",
    "version": "2019-11-27",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/MediaVideoResURI" : {
      "get": {
        "description": "This OCF Resource specifies the video media types that an OCF Device
supports.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description" : "Retrieves the video information for the specified or the current
media.",
            "x-example": {
              "rt": ["oic.r.media.video"],
              "id": "unique_example_id",
              "mediacore": {
                "title": "Video 1",
                "description": "Long user-friendly synopsis of Video 1",
                "mimetype": "video/mp4",
                "mediafile": "file://example/url/Video1.mp4",
                "genres": [{"category": "Movie", "subcategory": "Action"}, {"category": "Movie",
"subcategory": "Western"}],
                "ratinginfo": [{"ratingorganization": "MPAA", "rating": "PG-13"}],
                "identificationnumber": "EDID:1234-5678",
                "datetime": "2018-06-23T20:22:59-08:00",
                "mediaartwork": [
                  {
                    "rt": ["oic.r.icon"],
                    "mimetype": "image/png",
                    "width": 256,
                    "height": 256,
                    "media": "file://example/url/video1.png"
                  }
```

```
              ],
              "copyright": "Copyright notice by the copyright holder for Video 1"
            },
            "series": [
              "Series 1",
              "Series 2"
            ],
            "studio": [
              "Studio 1",
              "Studio 2"
            ],
            "cast": [
              "Actor 1",
              "Actress 2"
            ],
            "directors": [
              "Dircector 1",
              "Director 2"
            ],
            "producers": [
              "Producer 1",
              "Producer 2"
            ],
            "writers": [
              "Writer 1",
              "Writer 2"
            ],
            "composers": [
              "Composer 1",
              "Composer 2"
            ],
            "sdp": [
              "m=video 51372 RTP/AVP 99",
              "a=rtpmap:99 h263-1998/90000"
            ],
            "width": 1920,
            "height": 1080,
            "resolution": 200,
            "format": "progressive",
            "framerate": 30,
            "bitdepth": 8,
            "size": 44.064,
            "duration": "P0Y0M0DT1H22M59S",
            "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
            "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -
62.1},
            "language": "en"
          },
          "schema": {"$ref": "#/definitions/MediaVideo"}
        }
      }
    },
    "post": {
      "description": "Sets the Media Video properties.",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "x-example": {
            "mediacore": {
              "title": "Video 1",
              "description": "Long user-friendly synopsis of Video 1",
              "mimetype": "video/mp4",
              "mediafile": "file://example/url/Video1.mp4",
              "genres": [{"category": "Movie", "subcategory": "Action"}, {"category": "Movie",
"subcategory": "Western"}],
              "ratinginfo": [{"ratingorganization": "MPAA", "rating": "PG-13"}],
              "identificationnumber": "EDID:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
```


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```
                {
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/video1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for Video 1"
            },
            "series": [
              "Series 1",
              "Series 2"
            ],
            "studio": [
              "Studio 1",
              "Studio 2"
            ],
            "cast": [
              "Actor 1",
              "Actress 2"
            ],
            "directors": [
              "Dircector 1",
              "Director 2"
            ],
            "producers": [
              "Producer 1",
              "Producer 2"
            ],
            "writers": [
              "Writer 1",
              "Writer 2"
            ],
            "composers": [
              "Composer 1",
              "Composer 2"
            ],
            "sdp": [
              "m=video 51372 RTP/AVP 99",
              "a=rtpmap:99 h263-1998/90000"
            ],
            "width": 1920,
            "height": 1080,
            "resolution": 2073600,
            "format": "progressive",
            "framerate": 30,
            "bitdepth": 8,
            "size": 44.064,
            "duration": "P0Y0M0DT1H22M59S",
            "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
            "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -
62.1},
            "language": "en"
          },
          "schema": {"$ref": "#/definitions/MediaVideoUpdate"}
        }
      ],
      "responses": {
        "200": {
          "description" : "Sets the video information for the specified or the current media.",
          "x-example": {
            "mediacore": {
              "title": "Video 1",
              "description": "Long user-friendly synopsis of Video 1",
              "mimetype": "video/mp4",
              "mediafile": "file://example/url/Video1.mp4",
              "genres": [{"category": "Movie", "subcategory": "Action"}, {"category": "Movie",
"subcategory": "Western"}],
              "ratinginfo": [{"ratingorganization": "MPAA", "rating": "PG-13"}],
              "identificationnumber": "EDID:1234-5678",
              "datetime": "2018-06-23T20:22:59-08:00",
              "mediaartwork": [
```


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```
                {
                  "rt": ["oic.r.icon"],
                  "mimetype": "image/png",
                  "width": 256,
                  "height": 256,
                  "media": "file://example/url/video1.png"
                }
              ],
              "copyright": "Copyright notice by the copyright holder for Video 1"
            },
            "series": [
              "Series 1",
              "Series 2"
            ],
            "studio": [
              "Studio 1",
              "Studio 2"
            ],
            "cast": [
              "Actor 1",
              "Actress 2"
            ],
            "directors": [
              "Dircector 1",
              "Director 2"
            ],
            "producers": [
              "Producer 1",
              "Producer 2"
            ],
            "writers": [
              "Writer 1",
              "Writer 2"
            ],
            "composers": [
              "Composer 1",
              "Composer 2"
            ],
            "sdp": [
              "m=video 51372 RTP/AVP 99",
              "a=rtpmap:99 h263-1998/90000"
            ],
            "width": 1920,
            "height": 1080,
            "resolution": 200,
            "format": "progressive",
            "framerate": 30,
            "bitdepth": 8,
            "size": 44.064,
            "duration": "P0Y0M0DT1H22M59S",
            "location": "Death Valley National Park, Furnace Creek, CA 92328, USA",
            "geolocation": {"latitude": 36.4643308,"longitude": -116.86906640000001, "alt": -
62.1},
            "language": "en"
          },
          "schema": {"$ref": "#/definitions/MediaVideoUpdate"}
        }
      }
    }
  },
  "parameters": {
    "interface-r" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.rw", "oic.if.baseline"]
    },
    "interface-rw" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
```

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```
      "enum" : ["oic.if.rw"]
    }
  },
  "definitions": {
    "MediaVideo" : {
      "properties": {
        "rt": {
          "description": "The Resource Type of Media Video",
          "items": {
            "enum": ["oic.r.media.video"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "series" : {
          "description": "List of TV Series and episode",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "studio" : {
          "description": "List of studios that produced the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "cast" : {
          "description": "List of casts that acted in the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "directors" : {
          "description": "List of directors that directed the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "producers" : {
          "description": "List of producers that produced the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "writers" : {
          "description": "List of writers that wrote the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "composers" : {
```

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```
          "description": "List of composers that wrote the music",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "width" : {
          "description": "The resolution width of the video",
          "type": "integer"
        },
        "height" : {
          "description": "The resolution height of the video",
          "type": "integer"
        },
        "resolution" : {
          "description": "The resolution of the video in pixels",
          "type": "integer"
        },
        "format": {
          "type": "string",
          "description": "The available video formats.",
          "enum": [
            "progressive",
            "interlaced",
            "HDR",
            "HDR10",
            "HDR10+",
            "Dolby Vision"
          ]
        },
        "framerate" : {
          "description": "The frame rate of the video in frames per second.",
          "type": "integer"
        },
        "bitdepth" : {
          "description": "Bit (Colour) depth is either the number of bits used to indicate the
colour of a single pixel, in a bitmapped image or video framebuffer, or the number of bits used for
each colour component of a single pixel.",
          "type": "integer"
        },
        "size" : {
          "description": "The size of the video in KB - Kilo-Bytes",
          "type": "number"
        },
        "duration": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration",
          "description": "Duration is the total length of the media audio with format pattern
according to ISO 8601 (duration). For example, P0Y0M0DT1H22M59S represents a duration of 1 hour, 22
minutes, and 59 seconds."
        },
        "location" : {
          "description": "Location is the user-friendly string of the geographic location of the
video.",
          "type": "string"
        },
        "geolocation" : {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GeolocationResURI.swagger.json#/definiti
ons/Geolocation"
        },
```

```
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the video media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": ["oic.if.rw","oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    },
    "MediaVideoUpdate" : {
      "properties": {
        "mediacore": {
          "description": "The Media Core Properties common on all Media Resource Types,",
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/MediaCoreResURI.swagger.json#/definition
s/MediaCore"
        },
        "series" : {
          "description": "List of TV Series and episode",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "studio" : {
          "description": "List of studios that produced the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "cast" : {
          "description": "List of casts that acted in the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "directors" : {
          "description": "List of directors that directed the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "producers" : {
```

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```
          "description": "List of producers that produced the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "writers" : {
          "description": "List of writers that wrote the movie",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "composers" : {
          "description": "List of composers that wrote the music",
          "items": {
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "sdp" : {
          "description": "Array of strings, a string for each Session Description Protocol syntax.",
          "items": {
            "description": "Session Description Protocol is a format for describing streaming media
communications parameters using the media and attribute lines defined in RFC4566.",
            "type": "string"
          },
          "minItems": 1,
          "type": "array"
        },
        "width" : {
          "description": "The width of the video",
          "type": "integer"
        },
        "height" : {
          "description": "The height of the video",
          "type": "integer"
        },
        "resolution" : {
          "description": "The resolution of the video in pixels",
          "type": "integer"
        },
        "format": {
          "type": "string",
          "description": "The available video formats.",
          "enum": [
            "progressive",
            "interlaced",
            "HDR",
            "HDR10",
            "HDR10+",
            "Dolby Vision"
          ]
        },
        "framerate" : {
          "description": "The frame rate of the video in frames per second.",
          "type": "integer"
        },
        "bitdepth" : {
          "description": "Bit (Colour) depth is either the number of bits used to indicate the
colour of a single pixel, in a bitmapped image or video framebuffer, or the number of bits used for
each colour component of a single pixel.",
          "type": "integer"
        },
        "size" : {
          "description": "The size of the video in KB - Kilo-Bytes",
          "type": "number"
        },
        "duration": {
```

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```
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration",
          "description": "Duration is the total length of the media audio with format pattern
according to ISO 8601 (duration). For example, P0Y0M0DT1H22M59S represents a duration of 1 hour, 22
minutes, and 59 seconds."
        },
        "location" : {
          "description": "Location is the user-friendly string of the geographic location of the
video.",
          "type": "string"
        },
        "geolocation" : {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/GeolocationResURI.swagger.json#/definiti
ons/Geolocation"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the video media content with format pattern according
to RFC 5646 language tag"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        }
      },
      "type" : "object",
      "required": ["mediacore"]
    }
  }
}
```


7.162.5 Property definition

Table 332 defines the Properties that are part of the "oic.r.media.video" Resource Type.

Table 332 – The Property definitions of the Resource with type "rt" = "oic.r.media.video".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Media Video
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,
series	array: see schema	No	Read Write	List of TV Series and episode
studio	array: see schema	No	Read Write	List of studios that produced the movie
cast	array: see schema	No	Read Write	List of casts that acted in the movie
directors	array: see schema	No	Read Write	List of directors that directed the movie
producers	array: see schema	No	Read Write	List of producers that produced the movie
writers	array: see schema	No	Read Write	List of writers that wrote the movie
composers	array: see schema	No	Read Write	List of composers that wrote the music
sdp	array: see schema	No	Read Write	Array of strings, a string for each

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				Session Description Protocol syntax.
width	integer	No	Read Write	The resolution width of the video
height	integer	No	Read Write	The resolution height of the video
resolution	integer	No	Read Write	The resolution of the video in pixels
format	string	No	Read Write	The available video formats.
framerate	integer	No	Read Write	The frame rate of the video in frames per second.
bitdepth	integer	No	Read Write	Bit (Colour) depth is either the number of bits used to indicate the colour of a single pixel, in a bitmapped image or video framebuffer, or the number of bits used for each colour component of a single pixel.
size	number	No	Read Write	The size of the video in KB - Kilo-Bytes
duration	multiple types: see schema	No	Read Write	Duration is the total length of the media audio with format pattern according to ISO 8601 (duration). For example, P0Y0M0DT1H22M59S represents a duration of 1 hour, 22 minutes, and 59 seconds.
location	string	No	Read Write	Location is the user-friendly string of the geographic location of the video.
geolocation	multiple types: see schema	No	Read Write	
language	multiple types: see schema	No	Read Write	Current language of the video media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource
mediacore	multiple types: see schema	Yes	Read Write	The Media Core Properties common on all Media Resource Types,

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series	array: see schema	No	Read Write	List of TV Series and episode
studio	array: see schema	No	Read Write	List of studios that produced the movie
cast	array: see schema	No	Read Write	List of casts that acted in the movie
directors	array: see schema	No	Read Write	List of directors that directed the movie
producers	array: see schema	No	Read Write	List of producers that produced the movie
writers	array: see schema	No	Read Write	List of writers that wrote the movie
composers	array: see schema	No	Read Write	List of composers that wrote the music
sdp	array: see schema	No	Read Write	Array of strings, a string for each Session Description Protocol syntax.
width	integer	No	Read Write	The width of the video
height	integer	No	Read Write	The height of the video
resolution	integer	No	Read Write	The resolution of the video in pixels
format	string	No	Read Write	The available video formats.
framerate	integer	No	Read Write	The frame rate of the video in frames per second.
bitdepth	integer	No	Read Write	Bit (Colour) depth is either the number of bits used to indicate the colour of a single pixel, in a bitmapped image or video framebuffer, or the number of bits used for each colour component of a single pixel.
size	number	No	Read Write	The size of the video in KB - Kilo-Bytes
duration	multiple types: see schema	No	Read Write	Duration is the total length of the media audio with format pattern according to ISO 8601 (duration). For example, P0Y0M0DT1H22M59S represents a duration of 1 hour, 22 minutes, and 59 seconds.
location	string	No	Read Write	Location is the user-friendly string of the geographic location of the video.
geolocation	multiple types: see schema	No	Read Write	

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language	multiple types: see schema	No	Read Write	Current language of the video media content with format pattern according to RFC 5646 language tag
n	multiple types: see schema	No	Read Write	

7.162.6 CRUDN behaviour

Table 333 defines the CRUDN operations that are supported on the "oic.r.media.video" Resource Type.

Table 333 – The CRUDN operations of the Resource with type "rt" = "oic.r.media.video".

Create	Read	Update	Delete	Notify
	get	post		observe

7.163 Restricted Switch

7.163.1 Introduction

This Resource describes a switch(on/off) restricting UPDATE for 'on'.
The Property "state" is a Boolean.
A state of True means that the switch is turned on.
A state of False means that the switch is turned off.

7.163.2 Example URI

/RestrictedSwitchResURI

7.163.3 Resource type

The Resource Type is defined as: "oic.r.switch.restricted".

7.163.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Restricted Switch",
    "version": "20191119",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2019 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RestrictedSwitchResURI" : {
      "get": {
        "description": "This Resource describes a switch(on/off) restricting UPDATE for 'on'.\nThe
Property \"state\" is a Boolean.\nA state of True means that the switch is turned on.\nA state of
False means that the switch is turned off.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
```

```
                {
                  "rt": ["oic.r.switch.restricted"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "state": true
                },
              "schema": { "$ref": "#/definitions/RestrictedSwitch" }
            }
        }
      },
      "post": {
        "description": "A request to set the state to true is not allowed in an UPDATE",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/RestrictedSwitchUpdate" },
            "x-example":
              {
                "state": false
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example" : {
                  "state": false
              },
              "schema": { "$ref": "#/definitions/RestrictedSwitch" }
            },
            "403" : {
              "description": "This response is generated by the OCF server when the client
sends:\nAn UPDATE with an value for True.\n403 means the request is forbidden.\n",

              "x-example" : {

              }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "RestrictedSwitch" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.switch.restricted"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "state": {
          "description": "The status of the restricted switch.",
          "type":"boolean"
        },
        "n": {
```

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```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
              "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.a",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["state"]
      },
      "RestrictedSwitchUpdate" : {
        "properties": {
          "state": {
            "description": "Only False, which means 'off', is allowed in an UPDATE.",
            "enum": [false],
            "type":"boolean"
          }
        },
        "type": "object",
        "required": ["state"]
      }
    }
}
```

7.163.5 Property definition

Table 334 defines the Properties that are part of the "oic.r.switch.restricted" Resource Type.

Table 334 – The Property definitions of the Resource with type "rt" = "oic.r.switch.restricted".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
state	boolean	Yes	Read Write	The status of the restricted switch.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
state	boolean	Yes	Read Write	Only False, which means 'off', is allowed in an UPDATE.

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7.163.6 CRUDN behaviour

Table 335 defines the CRUDN operations that are supported on the "oic.r.switch.restricted" Resource Type.

Table 335 – The CRUDN operations of the Resource with type "rt" = "oic.r.switch.restricted".

Create	Read	Update	Delete	Notify
	get	post		observe

7.164 Device Settings Accessibility Resource Type

7.164.1 Introduction

Gets current device accessibility settings.

7.164.2 Example URI

/SettingsAccessibilityResURI

7.164.3 Resource type

The Resource Type is defined as: "oic.r.settings.accessibility".

7.164.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings Accessibility Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsAccessibilityResURI": {
      "get": {
        "description": "Gets current device accessibility settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device accessibility settings.",
            "x-example": {
              "rt": ["oic.r.settings.accessibility"],
              "id": "unique_example_id",
              "voice-guide": false,
              "video-description": false,
              "caption": false,
              "caption-mode": "default",
              "supported-caption-modes": ["cc1", "cc2", "cc3", "cc4", "text1", "text2", "text3",
"text4", "default"],
              "high-contrast": false,
              "enlarge": false
            },
            "schema": {"$ref": "#/definitions/settings-accessibility"}
          }
        }
      },
```

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```
    "post": {
      "description": "Changes the device accessibility settings.",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "x-example": {
            "voice-guide": false,
            "video-description": false,
            "caption": false,
            "caption-mode": "default",
            "high-contrast": false,
            "enlarge": false
          },
          "schema": {"$ref": "#/definitions/settings-accessibility-update"}
        }
      ],
      "responses": {
        "200": {
          "description": "Gives the information for the new device accessibility settings.",
          "x-example": {
          "voice-guide": false,
          "video-description": false,
          "caption": false,
          "caption-mode": "default",
          "high-contrast": false,
          "enlarge": false
          },
          "schema": {"$ref": "#/definitions/settings-accessibility-update"}
        }
      }
    }
  }
},
"parameters": {
  "interface-r": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw","oic.if.baseline"]
  },
  "interface-rw": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw"]
  }
},
"definitions": {
  "settings-accessibility": {
    "title": "Retrieve device settings for accessibility",
    "type": "object",
    "properties": {
      "rt": {
        "description": "The Resource Type of Device Settings for accessibility",
        "items": {
          "enum": ["oic.r.settings.accessibility"],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "if": {
        "items": {
          "enum": ["oic.if.rw", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 1,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "voice-guide": {
          "description": "Turns on or off voice guide.",
          "type": "boolean"
        },
        "video-description": {
          "description": "Turns on or off video description.",
          "type": "boolean"
        },
        "caption": {
          "description": "Turns on or off accessibility caption.",
          "type": "boolean"
        },
        "caption-mode": {
          "description": "Accessibility Caption Mode. Client can change caption-mode using
supported-caption-modes property.",
          "type": "string"
        },
        "supported-caption-modes": {
          "description": "The array of possible caption modes the device supports. This property
should be added if caption-mode is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        },
        "high-contrast": {
          "description": "Turns on or off high contrast.",
          "type": "boolean"
        },
        "enlarge": {
          "description": "Turns on or off print enlargement.",
          "type": "boolean"
        }
      },
      "required": ["caption"]
    },
    "settings-accessibility-update": {
      "title": "Update device settings for accessibility",
      "type": "object",
      "properties": {
        "voice-guide": {
          "description": "Turns on or off voice guide.",
          "type": "boolean"
        },
        "video-description": {
          "description": "Turns on or off video description.",
          "type": "boolean"
        },
        "caption": {
          "description": "Turns on or off accessibility caption.",
          "type": "boolean"
        },
        "caption-mode": {
          "description": "Accessibility Caption Mode. Client can change caption-mode using
supported-caption-modes property.",
          "type": "string"
        },
        "high-contrast": {
          "description": "Turns on or off high contrast.",
          "type": "boolean"
        },
```

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```
        "enlarge": {
          "description": "Turns on or off print enlargement.",
          "type": "boolean"
        }
      }
    }
  }
}
```

7.164.5 Property definition

Table 336 defines the Properties that are part of the "oic.r.settings.accessibility" Resource Type.

Table 336 – The Property definitions of the Resource with type "rt" = "oic.r.settings.accessibility".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Device Settings for accessibility
if	array: see schema	No	Read Only	
id	multiple types: see schema	No	Read Write	
voice-guide	boolean	No	Read Write	Turns on or off voice guide.
video-description	boolean	No	Read Write	Turns on or off video description.
caption	boolean	Yes	Read Write	Turns on or off accessibility caption.
caption-mode	string	No	Read Write	Accessibility Caption Mode. Client can change caption-mode using supported-caption-modes property.
supported-caption-modes	array: see schema	No	Read Only	The array of possible caption modes the device supports. This property should be added if caption-mode is supported.
high-contrast	boolean	No	Read Write	Turns on or off high contrast.
enlarge	boolean	No	Read Write	Turns on or off print enlargement.
voice-guide	boolean		Read Write	Turns on or off voice guide.
video-description	boolean		Read Write	Turns on or off video description.
caption	boolean		Read Write	Turns on or off accessibility caption.
caption-mode	string		Read Write	Accessibility Caption Mode. Client can change caption-mode using supported-caption-modes property.

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high-contrast	boolean		Read Write	Turns on or off high contrast.
enlarge	boolean		Read Write	Turns on or off print enlargement.

7.164.6 CRUDN behaviour

Table 337 defines the CRUDN operations that are supported on the "oic.r.settings.accessibility" Resource Type.

Table 337 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.accessibility".

Create	Read	Update	Delete	Notify
	get	post		observe

7.165 Device Settings Broadcasting Resource Type

7.165.1 Introduction

Gets current device broadcasting settings.

7.165.2 Example URI

/SettingsBroadcastingResURI

7.165.3 Resource type

The Resource Type is defined as: "oic.r.settings.broadcasting".

7.165.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings Broadcasting Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsBroadcastingResURI": {
      "get": {
        "description": "Gets current device broadcasting settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device broadcasting settings.",
            "x-example": {
              "rt": ["oic.r.settings.broadcasting"],
              "id": "unique_example_id",
              "antenna": "tv",
              "supported-antennas": ["composite", "hdtv", "tv"],
              "location-info": "location1",
              "carrier-info": "carrier1",
              "auto-program": false
            },
            "schema": {"$ref": "#/definitions/settings-broadcasting"}
```

```
        }
      }
    },
    "post": {
      "description": "Changes the device broadcasting settings.",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "x-example": {
            "antenna": "tv",
            "location-info": "location1",
            "carrier-info": "carrier1",
            "auto-program": false
          },
          "schema": {"$ref": "#/definitions/settings-broadcasting-update"}
        }
      ],
      "responses": {
        "200": {
          "description": "Gives the information for the new device broadcasting settings.",
          "x-example": {
            "antenna": "tv",
            "location-info": "location1",
            "carrier-info": "carrier1",
            "auto-program": false
          },
          "schema": {"$ref": "#/definitions/settings-broadcasting-update"}
        }
      }
    }
  }
},
"parameters": {
  "interface-r": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw","oic.if.baseline"]
  },
  "interface-rw": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw"]
  }
},
"definitions": {
  "settings-broadcasting": {
    "title": "Retrieve device settings for broadcasting",
    "type": "object",
    "properties": {
      "rt": {
        "description": "The Resource Type of Device Settings for broadcasting",
        "items": {
          "enum": ["oic.r.settings.broadcasting"],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "if": {
        "items": {
          "enum": ["oic.if.rw", "oic.if.baseline"],
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
```

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```
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "antenna": {
          "description": "Type of antenna",
          "type": "string"
        },
        "supported-antennas": {
          "description": "The array of possible antennas the device supports. This property should
be added if antenna is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        },
        "location-info": {
          "description": "Location information of the broadcast system.",
          "type": "string"
        },
        "carrier-info": {
          "description": "Carrier information of the broadcast system.",
          "type": "string"
        },
        "auto-program": {
          "description": "Scan for channels using Auto Program.",
          "type": "boolean"
        }
      },
      "required": ["antenna"]
    },
    "settings-broadcasting-update": {
      "title": "Update device settings for broadcasting",
      "type": "object",
      "properties": {
        "antenna": {
          "description": "Type of antenna. Client can change antenna using supported-antennas
property.",
          "type": "string"
        },
        "location-info": {
          "description": "Location information of the broadcast system.",
          "type": "string"
        },
        "carrier-info": {
          "description": "Carrier information of the broadcast system.",
          "type": "string"
        },
        "auto-program": {
          "description": "Scan for channels using Auto Program.",
          "type": "boolean"
        }
      }
    }
  }
}
```

7.165.5 Property definition

Table 338 defines the Properties that are part of the "oic.r.settings.broadcasting" Resource Type.

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Table 338 – The Property definitions of the Resource with type "rt" = "oic.r.settings.broadcasting".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Device Settings for broadcasting
if	array: see schema	No	Read Only	
id	multiple types: see schema	No	Read Write	
antenna	string	Yes	Read Write	Type of antenna
supported-antennas	array: see schema	No	Read Only	The array of possible antennas the device supports. This property should be added if antenna is supported.
location-info	string	No	Read Write	Location information of the broadcast system.
carrier-info	string	No	Read Write	Carrier information of the broadcast system.
auto-program	boolean	No	Read Write	Scan for channels using Auto Program.
antenna	string		Read Write	Type of antenna. Client can change antenna using supported-antennas property.
location-info	string		Read Write	Location information of the broadcast system.
carrier-info	string		Read Write	Carrier information of the broadcast system.
auto-program	boolean		Read Write	Scan for channels using Auto Program.

7.165.6 CRUDN behaviour

Table 339 defines the CRUDN operations that are supported on the "oic.r.settings.broadcasting" Resource Type.

Table 339 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.broadcasting".

Create	Read	Update	Delete	Notify
	get	post		observe

7.166 Device Settings Picture Resource Type

7.166.1 Introduction

Gets current device picture settings.

7.166.2 Example URI

/SettingsPictureResURI

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7.166.3 Resource type

The Resource Type is defined as: "oic.r.settings.picture".

7.166.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings Picture Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsPictureResURI": {
      "get": {
        "description": "Gets current device picture settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device picture settings.",
            "x-example": {
              "rt": ["oic.r.settings.picture"],
              "id": "unique_example_id",
              "picture-mode": "standard",
              "supported-picture-modes": ["dynamic","movie","natural","standard"],
              "backlight": 5,
              "contrast": 95,
              "brightness": 45,
              "sharpness": 50,
              "colour": 50,
              "colour-temperature": 0,
              "tint": 0,
              "picture-reset": false,
              "picture-off": false,
              "aspect-ratio": "16:9",
              "supported-aspect-ratio": ["16:9", "4:3", "Set by Program", "Zoom", "Just Scan",
"Cinema Zoom"]
            },
            "schema": {"$ref": "#/definitions/settings-picture"}
          }
        }
      },
      "post": {
        "description": "Changes the device picture settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "picture-mode": "standard",
              "backlight": 5,
              "contrast": 95,
              "brightness": 45,
              "sharpness": 50,
              "colour": 50,
              "colour-temperature": 0,
              "tint": 0,
```

```
              "picture-reset": false,
              "picture-off": false,
              "aspect-ratio": "16:9"
            },
            "schema": {"$ref": "#/definitions/settings-picture-update"}
          }
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the new device picture settings.",
            "x-example": {
              "picture-mode": "standard",
              "backlight": 5,
              "contrast": 95,
              "brightness": 45,
              "sharpness": 50,
              "colour": 50,
              "colour-temperature": 0,
              "tint": 0,
              "picture-reset": false,
              "picture-off": false,
              "aspect-ratio": "16:9"
            },
            "schema": {"$ref": "#/definitions/settings-picture-update"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw","oic.if.baseline"]
    },
    "interface-rw": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw"]
    }
  },
  "definitions": {
    "settings-picture": {
      "title": "Retrieve device settings for picture",
      "type": "object",
      "properties": {
        "rt": {
          "description": "The Resource Type of Device Settings for picture",
          "items": {
            "enum": ["oic.r.settings.picture"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```

```
schema.json#/definitions/id"
        },
        "picture-mode": {
          "description": "Device Settings Picture Mode. Client can change picture-mode using
supported-picture-modes property.",
          "type": "string"
        },
        "supported-picture-modes": {
          "description": "An array of possible picture modes the device supports. This property
should be added if picture-mode property is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        },
        "backlight": {
          "description": "Quantized representation in the range -10 to 10 of the current sensed or
set value for Device Settings Picture Backlight.",
          "maximum": 10,
          "minimum": -10,
          "type": "integer"
        },
        "contrast": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Contrast.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "brightness": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Brightness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "sharpness": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Sharpness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "colour": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Colour.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "colour-temperature": {
          "description": "Colour temperature range of -50 (Cool) to 50 (Warm).",
          "maximum": 50,
          "minimum": -50,
          "type": "integer"
        },
        "tint": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Tint. The closer to 100, the more saturated the red colour
becomes. The closer to 0, the more saturated the green colour becomes.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "picture-reset": {
          "description": "Resets all picture settings to the default values.",
          "type": "boolean"
        },
        "picture-off": {
          "description": "This turns picture on and off.",
```

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```
          "type": "boolean"
        },
        "aspect-ratio": {
          "description": "Device Settings Aspect Ratio. Client can change aspect-ratio using
supported-aspect-ratio property.",
          "type": "string"
        },
        "supported-aspect-ratio": {
          "description": "An array of possible aspect ratio the device supports. This property
should be added if aspect-ratio property is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        }
      },
      "required": ["brightness", "contrast"]
    },
    "settings-picture-update": {
      "title": "Update device settings for picture",
      "type": "object",
      "properties": {
        "picture-mode": {
          "description": "Device Settings Picture Mode. Client can change picture-mode using
supported-picture-modes property.",
          "type": "string"
        },
        "backlight": {
          "description": "Quantized representation in the range 0-10 of the current sensed or set
value for Device Settings Picture Backlight.",
          "maximum": 10,
          "minimum": 0,
          "type": "integer"
        },
        "contrast": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Contrast.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "brightness": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Brightness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "sharpness": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Sharpness.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "colour": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
value for Device Settings Picture Colour.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "colour-temperature": {
          "description": "Colour temperature range of -50 (Cool) to 50 (Warm).",
          "maximum": 50,
          "minimum": -50,
          "type": "integer"
        },
        "tint": {
          "description": "Quantized representation in the range 0-100 of the current sensed or set
```

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```
value for Device Settings Picture Tint. The closer to 100, the more saturated the red colour
becomes. The closer to 0, the more saturated the green colour becomes.",
          "maximum": 100,
          "minimum": 0,
          "type": "integer"
        },
        "picture-reset": {
          "description": "Resets all picture settings to the default values.",
          "type": "boolean"
        },
        "picture-off": {
          "description": "This turns picture on and off.",
          "type": "boolean"
        },
        "aspect-ratio": {
          "description": "Device Settings Aspect Ratio. Client can change aspect-ratio using
supported-aspect-ratio property.",
          "type": "string"
        }
      }
    }
  }
}
```

7.166.5 Property definition

Table 340 defines the Properties that are part of the "oic.r.settings.picture" Resource Type.

Table 340 – The Property definitions of the Resource with type "rt" = "oic.r.settings.picture".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Device Settings for picture
if	array: see schema	No	Read Only	
id	multiple types: see schema	No	Read Write	
picture-mode	string	No	Read Write	Device Settings Picture Mode. Client can change picture-mode using supported-picture-modes property.
supported-picture-modes	array: see schema	No	Read Only	An array of possible picture modes the device supports. This property should be added if picture-mode property is supported.
backlight	integer	No	Read Write	Quantized representation in the range -10 to 10 of the current sensed or set value for Device Settings Picture Backlight.
contrast	integer	Yes	Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Contrast.

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brightness	integer	Yes	Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Brightness.
sharpness	integer	No	Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Sharpness.
colour	integer	No	Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Colour.
colour-temperature	integer	No	Read Write	Colour temperature range of -50 (Cool) to 50 (Warm).
tint	integer	No	Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Tint. The closer to 100, the more saturated the red colour becomes. The closer to 0, the more saturated the green colour becomes.
picture-reset	boolean	No	Read Write	Resets all picture settings to the default values.
picture-off	boolean	No	Read Write	This turns picture on and off.
aspect-ratio	string	No	Read Write	Device Settings Aspect Ratio. Client can change aspect-ratio using supported-aspect-ratio property.
supported-aspect-ratio	array: see schema	No	Read Only	An array of possible aspect ratio the device supports. This property should be added if aspect-ratio property is supported.
picture-mode	string		Read Write	Device Settings Picture Mode. Client can change picture-mode using supported-picture-modes property.
backlight	integer		Read Write	Quantized representation in the range 0-10 of the

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				current sensed or set value for Device Settings Picture Backlight.
contrast	integer		Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Contrast.
brightness	integer		Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Brightness.
sharpness	integer		Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Sharpness.
Colour	integer		Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Colour.
colour-temperature	integer		Read Write	Colour temperature range of -50 (Cool) to 50 (Warm).
Tint	integer		Read Write	Quantized representation in the range 0-100 of the current sensed or set value for Device Settings Picture Tint. The closer to 100, the more saturated the red colour becomes. The closer to 0, the more saturated the green colour becomes.
picture-reset	boolean		Read Write	Resets all picture settings to the default values.
picture-off	boolean		Read Write	This turns picture on and off.
aspect-ratio	string		Read Write	Device Settings Aspect Ratio. Client can change aspect-ratio using supported-aspect-ratio property.

7.166.6 CRUDN behaviour

Table 341 defines the CRUDN operations that are supported on the "oic.r.settings.picture" Resource Type.

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Table 341 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.picture".

Create	Read	Update	Delete	Notify
	get	post		observe

7.167 Device Settings Sound Resource Type

7.167.1 Introduction

Gets current device sound settings.

7.167.2 Example URI

/SettingsSoundResURI

7.167.3 Resource type

The Resource Type is defined as: "oic.r.settings.sound".

7.167.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings Sound Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsSoundResURI": {
      "get": {
        "description": "Gets current device sound settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device sound settings.",
            "x-example": {
              "rt": ["oic.r.settings.sound"],
              "id": "unique_example_id",
              "speaker": "internal",
              "supported-speakers": ["hdmi", "headphone", "internal", "optical", "soundbar",
"wireless"],
              "sound-mode": "standard",
              "supported-sound-modes": ["clearVoice","custom","music","standard"],
              "auto-volume": true,
              "dolby-atmos-compatibility": false
            },
            "schema": {"$ref": "#/definitions/settings-sound"}
          }
        }
      },
      "post": {
        "description": "Changes the device sound settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
```

```
            "x-example": {
              "speaker": "internal",
              "sound-mode": "standard",
              "auto-volume": true,
              "dolby-atmos-compatibility": false
            },
            "schema": {"$ref": "#/definitions/settings-sound-update"}
          }
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the new device sound settings.",
            "x-example": {
              "speaker": "internal",
              "sound-mode": "standard",
              "auto-volume": true,
              "dolby-atmos-compatibility": false
            },
            "schema": {"$ref": "#/definitions/settings-sound-update"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw","oic.if.baseline"]
    },
    "interface-rw": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw"]
    }
  },
  "definitions": {
    "settings-sound": {
      "title": "Retrieve device settings for sound",
      "type": "object",
      "properties": {
        "rt": {
          "description": "The Resource Type of Device Settings for sound",
          "items": {
            "enum": ["oic.r.settings.sound"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "speaker": {
          "description": "Device Settings Sound - Speaker. Client can change speaker using
supported-speakers property.",
```

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```
          "type": "string"
        },
        "supported-speakers": {
          "description": "The array of possible speakers the device supports. This property should
be added if speaker is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        },
        "sound-mode": {
          "description": "Device Settings Sound - Sound Mode. Client can change sound-mode using
supported-sound-modes property.",
          "type": "string"
        },
        "supported-sound-modes": {
          "description": "The array of possible sound modes the device supports. This property
should be added if sound-mode is supported.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "minItems": 1,
          "type": "array"
        },
        "auto-volume": {
          "description": "Automatically equalizes the volume level when switching to antother
channel.",
          "type": "boolean"
        },
        "dolby-atmos-compatibility": {
          "description": "Supports dolby-atmos mode.",
          "type": "boolean"
        }
      },
      "required": ["speaker"]
    },
    "settings-sound-update": {
      "title": "Update device settings for sound",
      "type": "object",
      "properties": {
        "speaker": {
          "description": "Device Settings Sound - Speaker. Client can change speaker using
supported-speakers property.",
          "type": "string"
        },
        "sound-mode": {
          "description": "Device Settings Sound - Sound Mode. Client can change sound-mode using
supported-sound-modes property.",
          "type": "string"
        },
        "auto-volume": {
          "description": "Automatically equalizes the volume level when switching to antother
channel.",
          "type": "boolean"
        },
        "dolby-atmos-compatibility": {
          "description": "Recent devices support dolby-atmos mode.",
          "type": "boolean"
        }
      }
    }
  }
}
```

7.167.5 Property definition

Table 342 defines the Properties that are part of the "oic.r.settings.sound" Resource Type.

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Table 342 – The Property definitions of the Resource with type "rt" = "oic.r.settings.sound".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type of Device Settings for sound
if	array: see schema	No	Read Only	
id	multiple types: see schema	No	Read Write	
speaker	string	Yes	Read Write	Device Settings Sound - Speaker. Client can change speaker using supported-speakers property.
supported-speakers	array: see schema	No	Read Only	The array of possible speakers the device supports. This property should be added if speaker is supported.
sound-mode	string	No	Read Write	Device Settings Sound - Sound Mode. Client can change sound-mode using supported-sound-modes property.
supported-sound-modes	array: see schema	No	Read Only	The array of possible sound modes the device supports. This property should be added if sound-mode is supported.
auto-volume	boolean	No	Read Write	Automatically equalizes the volume level when switching to antother channel.
dolby-atmos-compatibility	boolean	No	Read Write	Supports dolby-atmos mode.
speaker	string		Read Write	Device Settings Sound - Speaker. Client can change speaker using supported-speakers property.
sound-mode	string		Read Write	Device Settings Sound - Sound Mode. Client can change sound-mode using supported-sound-modes property.
auto-volume	boolean		Read Write	Automatically equalizes the volume level when switching to antother channel.

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dolby-atmos-compatibility	boolean		Read Write	Recent devices support dolby-atmos mode.

7.167.6 CRUDN behaviour

Table 343 defines the CRUDN operations that are supported on the "oic.r.settings.sound" Resource Type.

Table 343 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.sound".

Create	Read	Update	Delete	Notify
	get	post		observe

7.168 Device Settings Support Resource Type

7.168.1 Introduction

Gets current device support settings.

7.168.2 Example URI

/SettingsSupportResURI

7.168.3 Resource type

The Resource Type is defined as: "oic.r.settings.support".

7.168.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings Support Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsSupportResURI": {
      "get": {
        "description": "Gets current device support settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device support settings.",
            "x-example": {
              "rt": ["oic.r.settings.support"],
              "id": "unique_example_id",
              "remote-management": false,
              "software-auto-update": false
            },
            "schema": {"$ref": "#/definitions/settings-support"}
          }
        }
      },
      "post": {
        "description": "Changes the device support settings.",
        "parameters": [
```

```
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "remote-management": false,
              "software-auto-update": false
            },
            "schema": {"$ref": "#/definitions/settings-support-update"}
          }
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the new device support settings.",
            "x-example": {
              "remote-management": false,
              "software-auto-update": false
            },
            "schema": {"$ref": "#/definitions/settings-support-update"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw","oic.if.baseline"]
    },
    "interface-rw": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw"]
    }
  },
  "definitions": {
    "settings-support": {
      "title": "Retrieve device settings for support",
      "type": "object",
      "properties": {
        "rt": {
          "description": "The Resource Type of Device Settings for support",
          "items": {
            "enum": ["oic.r.settings.support"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "remote-management": {
          "description": "Allows support remote access so support can control user setting and
```

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```
troubleshoot problem.",
          "type": "boolean"
        },
        "software-auto-update": {
          "description": "Software - Auto Update.",
          "type": "boolean"
        }
      }
    },
    "settings-support-update": {
      "title": "Update device settings for support",
      "type": "object",
      "properties": {
        "remote-management": {
          "description": "Allows support remote access so support can control user setting and
troubleshoot problem.",
          "type": "boolean"
        },
        "software-auto-update": {
          "description": "Software - Auto Update.",
          "type": "boolean"
        }
      }
    }
  }
}
```


7.168.5 Property definition

Table 344 defines the Properties that are part of the "oic.r.settings.support" Resource Type.

Table 344 – The Property definitions of the Resource with type "rt" = "oic.r.settings.support".

Property name	Value type	Mandatory	Access mode	Description
Rt	array: see schema		Read Only	The Resource Type of Device Settings for support
If	array: see schema		Read Only	
Id	multiple types: see schema		Read Write	
remote-management	boolean		Read Write	Allows support remote access so support can control user setting and troubleshoot problem.
software-auto-update	boolean		Read Write	Software - Auto Update.
remote-management	boolean		Read Write	Allows support remote access so support can control user setting and troubleshoot problem.
software-auto-update	boolean		Read Write	Software - Auto Update.

7.168.6 CRUDN behaviour

Table 345 defines the CRUDN operations that are supported on the "oic.r.settings.support" Resource Type.

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Table 345 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.support".

Create	Read	Update	Delete	Notify
	get	post		observe

7.169 Device Settings System Resource Type

7.169.1 Introduction

Gets current device system settings.

7.169.2 Example URI

/SettingsSystemResURI

7.169.3 Resource type

The Resource Type is defined as: "oic.r.settings.system".

7.169.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Device Settings System Resource Type",
    "version": "2020-04-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SettingsSystemResURI": {
      "get": {
        "description": "Gets current device system settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-r"}
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the device system settings.",
            "x-example": {
              "rt": ["oic.r.settings.system"],
              "id": "unique_example_id",
              "n": "Living Room TV",
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/settings-system"}
          }
        }
      },
      "post": {
        "description": "Changes the device system settings.",
        "parameters": [
          {"$ref": "#/parameters/interface-rw"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "x-example": {
              "language": "en"
            },
```

```
            "schema": {"$ref": "#/definitions/settings-system-update"}
          }
        ],
        "responses": {
          "200": {
            "description": "Gives the information for the new device system settings.",
            "x-example": {
              "language": "en"
            },
            "schema": {"$ref": "#/definitions/settings-system-update"}
          }
        }
      }
    }
  },
  "parameters": {
    "interface-r": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw","oic.if.baseline"]
    },
    "interface-rw": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw"]
    }
  },
  "definitions": {
    "settings-system": {
      "title": "Retrieve device settings for system",
      "type": "object",
      "properties": {
        "rt": {
          "description": "The Resource Type of Device Settings for system",
          "items": {
            "enum": ["oic.r.settings.system"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "if": {
          "items": {
            "enum": ["oic.if.rw", "oic.if.baseline"],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "n": {
          "description": "Friendly name of the Device.",
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the device settings with format pattern according to
RFC 5646 language tag"
        }
```

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```
      }
    },
    "settings-system-update": {
      "title": "Update device settings for system",
      "type": "object",
      "properties": {
        "language": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/language-tag",
          "description": "Current language of the device settings with format pattern according to
RFC 5646 language tag"
        }
      }
    }
  }
}
```

7.169.5 Property definition

Table 346 defines the Properties that are part of the "oic.r.settings.system" Resource Type.

Table 346 – The Property definitions of the Resource with type "rt" = "oic.r.settings.system".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema		Read Only	The Resource Type of Device Settings for system
if	array: see schema		Read Only	
id	multiple types: see schema		Read Write	
n	multiple types: see schema		Read Write	Friendly name of the Device.
language	multiple types: see schema		Read Write	Current language of the device settings with format pattern according to RFC 5646 language tag
language	multiple types: see schema		Read Write	Current language of the device settings with format pattern according to RFC 5646 language tag

7.169.6 CRUDN behaviour

Table 347 defines the CRUDN operations that are supported on the "oic.r.settings.system" Resource Type.

Table 347 – The CRUDN operations of the Resource with type "rt" = "oic.r.settings.system".

Create	Read	Update	Delete	Notify
	get	post		observe

7.170 Generic Measurement Sensor

7.170.1 Introduction

This Resource describes a continuous measurement of some value or property or entity .
The Property "measurement" is a number.

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The Property unit is a string and will contain an SI unit of measurement in senML format https://www.iana.org/assignments/senml/senml.xhtml

7.170.2 Example URI

/GenericMeasurementResURI

7.170.3 Resource type

The Resource Type is defined as: "oic.r.sensor.measurement".

7.170.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Generic Measurement Sensor",
    "version": "2020-08-17",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/GenericMeasurementResURI" : {
      "get": {
        "description": "This Resource describes a continuous measurement of some value or property
or entity .\nThe Property \"measurement\" is a number.\n The Property unit is a string and will
contain an SI unit of measurement in senML format
https://www.iana.org/assignments/senml/senml.xhtml",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "rt":    ["oic.r.sensor.measurement"],
              "id":    "unique_example_id",
              "measurement": 300.5,
              "unit": "dB",
              "n": "environmental sound measurement"
            },
            "schema": { "$ref": "#/definitions/Measurement" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in" : "query",
      "name" : "if",
      "type" : "string",
      "enum" : ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Measurement": {
      "properties": {
        "rt":  {
          "description": "The Resource Type",
          "items": {
            "maxLength": 64,
```

```
            "type": "string",
            "enum": ["oic.r.sensor.measurement"]
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "unit":   {
          "description": "SI unit in SenML of the measurement",
          "readOnly": true,
          "type": "string"
        },
        "measurement":  {
          "type": "number",
          "description": "Measured value for this sensor, units depend on the specific type of
sensor",
          "readOnly": true
        },
        "precision":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/precision"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "range":  {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_number"
        },
        "step": {
          "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_number"
        },
        "id":  {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :  {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type" : "object",
      "required": ["measurement", "unit"]
    }
  }
}
```

7.170.5 Property definition

Table 348 defines the Properties that are part of the "oic.r.sensor.measurement" Resource Type.

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Table 348 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.measurement".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type
unit	string	Yes	Read Only	SI unit in SenML of the measurement
measurement	number	Yes	Read Only	Measured value for this sensor, units depend on the specific type of sensor
precision	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
range	multiple types: see schema	No	Read Write	
step	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource

7.170.6 CRUDN behaviour

Table 349 defines the CRUDN operations that are supported on the "oic.r.sensor.measurement" Resource Type.

Table 349 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.measurement".

Create	Read	Update	Delete	Notify
	get			observe

7.171 UVA Radiation

7.171.1 Introduction

This Resource specifies UV radiation measurement.
The Property "measurement" is the current measured UVA. The intensity of UV radiation is measured in the units of milliwatts per square centimetre (mW/cm2) which is energy per square centimetre received per second. UVA is measured between 315 and 400 nanometres in the electromagnetic spectrum.

7.171.2 Example URI

/UVRadiationResURI

7.171.3 Resource type

The Resource Type is defined as: "oic.r.sensor.radiation.uva".

7.171.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
```

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```
    "title": "UVA Radiation",
    "version": "2020-08-13",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This Resource specifies UV radiation measurement.\nThe Property
\"measurement\" is the current measured UVA. The intensity of UV radiation is measured in the units
of milliwatts per square centimeter (mW/cm2) which is energy per square centimeter received per
second. UVA is measured between 315 and 400 nanometers in the electromagnetic spectrum.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.radiation.uva"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "measurement": 23.5
                }
                ,
              "schema": { "$ref": "#/definitions/UVARadiation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVARadiation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.radiation.uva"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "measurement": {
          "description": "The measured UVA.",
          "readOnly": true,
          "type": "number",
          "minimum": 0
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
```

```
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :
                {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["measurement"]
    }
  }
}
```

7.171.5 Property definition

Table 350 defines the Properties that are part of the "oic.r.sensor.radiation.uva" Resource Type.

Table 350 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.radiation.uva".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
measurement	number	Yes	Read Only	The measured UVA.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.171.6 CRUDN behaviour

Table 351 defines the CRUDN operations that are supported on the "oic.r.sensor.radiation.uva" Resource Type.

Table 351 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.radiation.uva".

Create	Read	Update	Delete	Notify
	get			observe

7.172 UVB Radiation

7.172.1 Introduction

This Resource specifies UV radiation measurement.
The Property "measurement" is the current measured UVB. The intensity of UV radiation is measured in the units of milliwatts per square centimetre (mW/cm2) which is energy per square

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centimetre received per second. UVB is measured between 280 and 315 nanometres in the electromagnetic spectrum.

7.172.2 Example URI

/UVRadiationResURI

7.172.3 Resource type

The Resource Type is defined as: "oic.r.sensor.radiation.uvb".

7.172.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "UVB Radiation",
    "version": "2020-08-13",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/UVRadiationResURI" : {
      "get": {
        "description": "This Resource specifies UV radiation measurement.\nThe Property
\"measurement\" is the current measured UVB. The intensity of UV radiation is measured in the units
of milliwatts per square centimeter (mW/cm2) which is energy per square centimeter received per
second. UVB is measured between 280 and 315 nanometers in the electromagnetic spectrum.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.sensor.radiation.uvb"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "measurement": 35.5
                }
                ,
              "schema": { "$ref": "#/definitions/UVBRadiation" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "UVBRadiation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sensor.radiation.uvb"],
```

```
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "measurement": {
          "description": "The measured UVB.",
          "readOnly": true,
          "type": "number",
          "minimum": 0
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if" :
                {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["measurement"]
    }
  }
}
```

7.172.5 Property definition

Table 352 defines the Properties that are part of the "oic.r.sensor.radiation.uvb" Resource Type.

Table 352 – The Property definitions of the Resource with type "rt" = "oic.r.sensor.radiation.uvb".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
measurement	number	Yes	Read Only	The measured UVB.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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7.172.6 CRUDN behaviour

Table 353 defines the CRUDN operations that are supported on the "oic.r.sensor.radiation.uvb" Resource Type.

Table 353 – The CRUDN operations of the Resource with type "rt" = "oic.r.sensor.radiation.uvb".

Create	Read	Update	Delete	Notify
	get			observe

7.173 Colour Rendering Index

7.173.1 Introduction

This Resource describes a Colour Rendering Index (CRI).
The Property "cri" is an number.
A colour rendering index (CRI) is a quantitative measure of the ability of a light source to reveal the colours of various objects faithfully in comparison with an ideal or natural light source.
Light sources with a high CRI are desirable in colour-critical applications such as neonatal care and art restoration.
It is defined by the International Commission on Illumination (CIE) as follows:[1]
Colour rendering: Effect of an illuminant on the colour appearance of objects by conscious or subconscious comparison with their colour appearance under a reference illuminant. The value often quoted as 'CRI' on commercially available lighting products is properly called the CIE Ra value, 'CRI' being a general term and CIE Ra being the international standard colour rendering index

7.173.2 Example URI

/ColourRenderingIndexResURI

7.173.3 Resource type

The Resource Type is defined as: "oic.r.colour.renderingindex".

7.173.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Colour Rendering Index",
    "version": "2020-10-16",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ColourRenderingIndexResURI" : {
      "get": {
        "description": "This Resource describes a Colour Rendering Index (CRI).\nThe Property
\"cri\" is an number.\nA colour rendering index (CRI) is a quantitative measure of the ability of a
light source to reveal the colours of various objects faithfully in comparison with an ideal or
natural light source.\nLight sources with a high CRI are desirable in colour-critical applications
such as neonatal care and art restoration.\nIt is defined by the International Commission on
Illumination (CIE) as follows:[1] \nColour rendering: Effect of an illuminant on the colour
appearance of objects by conscious or subconscious comparison with their colour appearance under a
reference illuminant. The value often quoted as 'CRI' on commercially available lighting products is
```

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```
properly called the CIE Ra value, 'CRI' being a general term and CIE Ra being the international
standard colour rendering index",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
                  "rt": ["oic.r.colour.renderingindex"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "cri": 80.1
                },
              "schema": { "$ref": "#/definitions/RenderingIndex" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "RenderingIndex" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.colour.renderingindex"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "cri": {
          "description": "The colour rendering index.",
          "maximum": 100,
          "type": "number",
          "readOnly": true
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
```

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```
      },
      "type": "object",
      "required": ["cri"]
    }
  }
}
```

7.173.5 Property definition

Table 354 defines the Properties that are part of the "oic.r.colour.renderingindex" Resource Type.

Table 354 – The Property definitions of the Resource with type "rt" = "oic.r.colour.renderingindex".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
cri	number	Yes	Read Only	The colour rendering index.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.173.6 CRUDN behaviour

Table 355 defines the CRUDN operations that are supported on the "oic.r.colour.renderingindex" Resource Type.

Table 355 – The CRUDN operations of the Resource with type "rt" = "oic.r.colour.renderingindex".

Create	Read	Update	Delete	Notify
	get			observe

7.174 Sound Pressure in Pascal

7.174.1 Introduction

This Resource describes a measured sound pressure in Pascal (pa).
The Sound pressure is a property of the sound field at a point in space where the point is the actual location of the sensor.

7.174.2 Example URI

/SoundPressureResURI

7.174.3 Resource type

The Resource Type is defined as: "oic.r.sound.pressure".

7.174.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sound Pressure in Pascal",
    "version": "2020-09-01",
    "license": {
      "name": "OCF Data Model License",
      "url":
```

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```
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SoundPressureResURI" : {
      "get": {
        "description": "This Resource describes a measured sound pressure in Pascal (pa).\n The
Sound pressure is a property of the sound field at a point in space where the point is the actual
location of the sensor.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
                  "rt": ["oic.r.sound.pressure"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "soundpa": 0.002
                },
              "schema": { "$ref": "#/definitions/SoundPressure" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SoundPressure" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sound.pressure"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "soundpa": {
          "description": "The sound pressure in pascal.",
          "type": "number",
          "readOnly": true,
          "minimum": 0
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
```

```
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.s",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["soundpa"]
    }
  }
}
```

7.174.5 Property definition

Table 356 defines the Properties that are part of the "oic.r.sound.pressure" Resource Type.

Table 356 – The Property definitions of the Resource with type "rt" = "oic.r.sound.pressure".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
soundpa	number	Yes	Read Only	The sound pressure in pascal.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.174.6 CRUDN behaviour

Table 357 defines the CRUDN operations that are supported on the "oic.r.sound.pressure" Resource Type.

Table 357 – The CRUDN operations of the Resource with type "rt" = "oic.r.sound.pressure".

Create	Read	Update	Delete	Notify
	get			observe

7.175 Sound Pressure Level in dB

7.175.1 Introduction

This Resource describes a measured sound pressure in dB.
The Sound pressure is a property of the sound field at a point in space where the point is the actual location of the sensor.

7.175.2 Example URI

/SoundPressureLevelResURI

7.175.3 Resource type

The Resource Type is defined as: "oic.r.sound.pressurelevel".

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7.175.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Sound Pressure Level in dB",
    "version": "2020-09-01",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/SoundPressureLevelResURI" : {
      "get": {
        "description": "This Resource describes a measured sound pressure in dB.\n The Sound
pressure is a property of the sound field at a point in space where the point is the actual location
of the sensor.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
                  "rt": ["oic.r.sound.pressurelevel"],
                  "if": ["oic.if.s", "oic.if.baseline"],
                  "sounddB": 40.3
                },
              "schema": { "$ref": "#/definitions/SoundPressureLevel" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.baseline"]
    }
  },
  "definitions": {
    "SoundPressureLevel" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.sound.pressurelevel"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "sounddB": {
          "description": "The sound pressure level in dB.",
          "type": "number",
          "readOnly": true,
          "minimum": 0
        },
        "n": {
```

```
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
          },
          "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
          },
          "if": {
            "description": "The OCF Interface set supported by this Resource.",
            "items": {
              "enum": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "type": "string"
            },
            "minItems": 2,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          }
        },
        "type": "object",
        "required": ["sounddB"]
      }
    }
}
```

7.175.5 Property definition

Table 358 defines the Properties that are part of the "oic.r.sound.pressurelevel" Resource Type.

Table 358 – The Property definitions of the Resource with type "rt" = "oic.r.sound.pressurelevel".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
sounddB	number	Yes	Read Only	The sound pressure level in dB.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

7.175.6 CRUDN behaviour

Table 359 defines the CRUDN operations that are supported on the "oic.r.sound.pressurelevel" Resource Type.

Table 359 – The CRUDN operations of the Resource with type "rt" = "oic.r.sound.pressurelevel".

Create	Read	Update	Delete	Notify
	get			observe

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7.176 Civic Location

7.176.1 Introduction

This Resource describes the properties associated with the current civic location.
The Properties modelled follow the definition of the Location Object provided by RFC 4119 and clarified by RFC 5774.
If a Device supports this Resource but has no defined content for it (yet) the response to a RETRIEVE contains just the "name" Property containing an empty string

7.176.2 Example URI

/CivicLocationResURI

7.176.3 Resource type

The Resource Type is defined as: "oic.r.location.civic".

7.176.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Civic Location",
    "version": "2020-09-09",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/CivicLocationResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with the current civic
location.\nThe Properties modelled follow the definition of the Location Object provided by RFC 4119
and clarified by RFC 5774.\nIf a Device supports this Resource but has no defined content for it
(yet) the response to a RETRIEVE contains just the \"name\" Property containing an empty string",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current civic location. ",
            "x-example": {
              "rt": ["oic.r.location.civic"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "country": "US",
              "national-a1": "New York",
              "region-a2": "King's County",
              "city-a3": "New York",
              "citydivision-a4": "Manhattan",
              "block-a5": "Midtown",
              "street-a6": "5th",
              "prd": "N",
              "pod": "SW",
              "sts": "Avenue",
              "buildingnumber": 455,
              "buildingnumbersuffix": "A",
              "landmark": "Public Library",
              "loc": "Basement Stacks",
              "flr": -1,
              "name": "I ain't afraid",
              "postalcode": "10016"
            },
```

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```
          "schema": { "$ref": "#/definitions/Civiclocation" }
        }
      }
    },
    "post": {
      "description": "Update or set Civic Location information.",
      "parameters": [
        {"$ref": "#/parameters/interface-rw"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/Civiclocation-Update" },
          "x-example": {
            "country": "GB",
            "national-a1": "Scotland",
            "region-a2": "Perthshire",
            "city-a3": "Doune",
            "street-a6": "Castle Hill",
            "landmark": "Doune Castle",
            "postalcode": "FK16 6EA"
          }
        }
      ],
      "responses": {
        "200": {
          "description" : "",
          "x-example": {
            "country": "GB",
            "national-a1": "Scotland",
            "region-a2": "Perthshire",
            "city-a3": "Doune",
            "street-a6": "Castle Hill",
            "landmark": "Doune Castle",
            "postalcode": "FK16 6EA"
          },
          "schema": { "$ref": "#/definitions/Civiclocation-Update" }
        }
      }
    }
  }
},
"parameters": {
  "interface": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw", "oic.if.baseline"]
  },
  "interface-rw": {
    "in": "query",
    "name": "if",
    "type": "string",
    "enum": ["oic.if.rw"]
  }
},
"definitions": {
  "Civiclocation" : {
    "properties": {
      "rt": {
        "description": "The Resource Type.",
        "items": {
          "enum": ["oic.r.location.civic"],
          "maxLength": 64,
          "type": "string"
        },
        "minItems": 1,
        "uniqueItems": true,
        "readOnly": true,
        "type": "array"
      },
      "country": {
```

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```
          "description": "The Country using the ISO 3166 two letter code.",
          "type": "string"
        },
        "national-a1": {
          "description": "The National subdivision (state, province etc).",
          "type": "string"
        },
        "region-a2": {
          "description": "The Regional subdivision (county, parish, district etc).",
          "type": "string"
        },
        "city-a3": {
          "description": "The City, Township, or similar.",
          "type": "string"
        },
        "citydivision-a4": {
          "description": "The division within a City or Town.",
          "type": "string"
        },
        "block-a5": {
          "description": "The block or neighbourhood.",
          "type": "string"
        },
        "street-a6": {
          "description": "The Street name.",
          "type": "string"
        },
        "prd": {
          "description": "Leading Street Direction.",
          "type": "string",
          "enum": ["N","S","E","W","NE","NW","SE","SW"]
        },
        "pod": {
          "description": "Trailing Street Suffix.",
          "type": "string",
          "enum": ["N","S","E","W","NE","NW","SE","SW"]
        },
        "sts": {
          "description": "Street Suffix.",
          "type": "string"
        },
        "buildingnumber": {
          "description": "House or Building Number.",
          "type": "integer"
        },
        "buildingnumbersuffix": {
          "description": "Building Number Suffix.",
          "type": "string"
        },
        "landmark": {
          "description": "Landmark or vanity address.",
          "type": "string"
        },
        "loc": {
          "description": "Additional location information.",
          "type": "string"
        },
        "flr": {
          "description": "Floor of the building. Zero (0) represents the floor that is at street
(ground) level.",
          "type": "integer"
        },
        "name": {
          "description": "Resident, Business etc.",
          "type": "string"
        },
        "postalcode": {
          "description": "Postal or Zip code.",
          "type": "string"
        },
        "n": {
            "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["name"]
    },
    "Civiclocation-Update" : {
      "properties": {
        "country": {
          "description": "The Country using the ISO 3166 two letter code.",
          "type": "string"
        },
        "national-a1": {
          "description": "The National subdivision (state, province etc).",
          "type": "string"
        },
        "region-a2": {
          "description": "The Regional subdivision (county, parish, district etc).",
          "type": "string"
        },
        "city-a3": {
          "description": "The City, Township, or similar.",
          "type": "string"
        },
        "citydivision-a4": {
          "description": "The division within a City or Town.",
          "type": "string"
        },
        "block-a5": {
          "description": "The block or neighbourhood.",
          "type": "string"
        },
        "street-a6": {
          "description": "The Street name.",
          "type": "string"
        },
        "prd": {
          "description": "Leading Street Direction.",
          "type": "string",
          "enum": ["N","S","E","W","NE","NW","SE","SW"]
        },
        "pod": {
          "description": "Trailing Street Suffix.",
          "type": "string",
          "enum": ["N","S","E","W","NE","NW","SE","SW"]
        },
        "sts": {
          "description": "Street Suffix.",
          "type": "string"
        },
        "buildingnumber": {
          "description": "House or Building Number.",
```

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```
          "type": "integer"
        },
        "buildingnumbersuffix": {
          "description": "Building Number Suffix.",
          "type": "string"
        },
        "landmark": {
          "description": "Landmark or vanity address.",
          "type": "string"
        },
        "loc": {
          "description": "Additional location information.",
          "type": "string"
        },
        "flr": {
          "description": "Floor of the building. Zero (0) represents the floor that is at street
(ground) level.",
          "type": "integer"
        },
        "name": {
          "description": "Resident, Business etc.",
          "type": "string"
        },
        "postalcode": {
          "description": "Postal or Zip code.",
          "type": "string"
        }
      },
      "type": "object"
    }
  }
}
```

7.176.5 Property definition

Table 360 defines the Properties that are part of the "oic.r.location.civic" Resource Type.

Table 360 – The Property definitions of the Resource with type "rt" = "oic.r.location.civic".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
country	string	No	Read Write	The Country using the ISO 3166 two letter code.
national-a1	string	No	Read Write	The National subdivision (state, province etc).
region-a2	string	No	Read Write	The Regional subdivision (county, parish, district etc).
city-a3	string	No	Read Write	The City, Township, or similar.
citydivision-a4	string	No	Read Write	The division within a City or Town.
block-a5	string	No	Read Write	The block or neighbourhood.
street-a6	string	No	Read Write	The Street name.
prd	string	No	Read Write	Leading Street Direction.
pod	string	No	Read Write	Trailing Street Suffix.
sts	string	No	Read Write	Street Suffix.

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buildingnumber	integer	No	Read Write	House or Building Number.
buildingnumbersuffix	string	No	Read Write	Building Number Suffix.
landmark	string	No	Read Write	Landmark or vanity address.
loc	string	No	Read Write	Additional location information.
flr	integer	No	Read Write	Floor of the building. Zero (0) represents the floor that is at street (ground) level.
name	string	Yes	Read Write	Resident, Business etc.
postalcode	string	No	Read Write	Postal or Zip code.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
country	string		Read Write	The Country using the ISO 3166 two letter code.
national-a1	string		Read Write	The National subdivision (state, province etc).
region-a2	string		Read Write	The Regional subdivision (county, parish, district etc).
city-a3	string		Read Write	The City, Township, or similar.
citydivision-a4	string		Read Write	The division within a City or Town.
block-a5	string		Read Write	The block or neighbourhood.
street-a6	string		Read Write	The Street name.
prd	string		Read Write	Leading Street Direction.
pod	string		Read Write	Trailing Street Suffix.
sts	string		Read Write	Street Suffix.
buildingnumber	integer		Read Write	House or Building Number.
buildingnumbersuffix	string		Read Write	Building Number Suffix.
landmark	string		Read Write	Landmark or vanity address.
loc	string		Read Write	Additional location information.
flr	integer		Read Write	Floor of the building. Zero (0) represents

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				the floor that is at street (ground) level.
name	string		Read Write	Resident, Business etc.
postalcode	string		Read Write	Postal or Zip code.

7.176.6 CRUDN behaviour

Table 361 defines the CRUDN operations that are supported on the "oic.r.location.civic" Resource Type.

Table 361 – The CRUDN operations of the Resource with type "rt" = "oic.r.location.civic".

Create	Read	Update	Delete	Notify
	get	post		observe

7.177 Remote Control

7.177.1 Introduction

This Resource describes a remote control function, which helps users to control a device without the actual remote controller provided by the manufacturer.

7.177.2 Example URI

/RemoteControlResURI

7.177.3 Resource type

The Resource Type is defined as: "oic.r.remotecontrol".

7.177.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Remote Control",
    "version": "2021-02-25",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/RemoteControlResURI" : {
      "get": {
        "description": "This Resource describes a remote control function, which helps users to
control a device without the actual remote controller provided by the manufacturer.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the supported Remote Control actions.",
              "x-example":
                {
                  "rt": ["oic.r.remotecontrol"],
                  "supportedactions":
["arrowup","arrowdown","arrowleft","arrowright","enter","return",
                    "exit","home","1","2","3","4","5","6","7","8","9","0", "-"]
```

```
              },
              "schema": { "$ref": "#/definitions/RemoteControl" }
            }
          }
        },
        "post": {
          "description": "Click the remote controller button to perform the actions desired by the
user. If the key remains pressed, the POST will be repeated at 100ms intervals.",
          "parameters": [
            {"$ref": "#/parameters/interface"},
            {"$ref": "#/parameters/keypress"}
          ],
          "responses": {
              "200": {
                "description" : "Show pressed key(s)",
                "x-example":
                  {
                    "selectedactions": ["arrowup"]
                  },
                "schema": { "$ref": "#/definitions/UpdateResponse" }
              }
          }
        }
      }
    },
    "parameters": {
      "interface": {
        "in": "query",
        "name": "if",
        "type": "string",
        "enum": ["oic.if.a", "oic.if.baseline"]
      },
      "keypress": {
      "name": "action",
      "in": "query",
      "type": "string",
      "required": true,
      "enum": ["arrowup","arrowdown","arrowleft","arrowright","enter","return","exit","home",
        "1","2","3","4","5","6","7","8","9","0","-"],
      "x-example":
        {
          "action": "arrowup"
        }
      }
    },
    "definitions": {
      "RemoteControl" : {
        "properties": {
          "rt": {
            "description": "The Resource Type.",
            "items": {
              "enum": ["oic.r.remotecontrol"],
              "maxLength": 64,
              "type": "string"
            },
            "minItems": 1,
            "uniqueItems": true,
            "readOnly": true,
            "type": "array"
          },
          "supportedactions": {
              "type": "array",
              "minItems": 1,
              "readOnly": true,
              "uniqueItems": true,
              "items": {
                "type": "string",
                "enum":
["arrowup","arrowdown","arrowleft","arrowright","enter","return","exit","home",
                  "1","2","3","4","5","6","7","8","9","0","-"]
              },
              "description": "The list of of supported remote control key values."
```

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```
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["supportedactions"]
    },
    "UpdateResponse": {
      "properties": {
        "selectedactions": {
          "type": "array",
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "items": {
            "type": "string",
            "enum": ["arrowup","arrowdown","arrowleft","arrowright","enter","return","exit","home",
              "1","2","3","4","5","6","7","8","9","0","-"]
          },
          "description": "The list of of actions selected by a Client in the UPDATE."
        }
      },
      "type": "object"
    }
  }
}
```

7.177.5 Property definition

Table 362 defines the Properties that are part of the "oic.r.remotecontrol" Resource Type.

Table 362 – The Property definitions of the Resource with type "rt" = "oic.r.remotecontrol".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
supportedactions	array: see schema	Yes	Read Only	The list of of supported remote control key values.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.

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selectedactions	array: see schema		Read Only	The list of of actions selected by a Client in the UPDATE.

7.177.6 CRUDN behaviour

Table 363 defines the CRUDN operations that are supported on the "oic.r.remotecontrol" Resource Type.

Table 363 – The CRUDN operations of the Resource with type "rt" = "oic.r.remotecontrol".

Create	Read	Update	Delete	Notify
	get	post		observe

7.178 TV Apps

7.178.1 Introduction

This Resource describes an app launch function, which can show an app list and the launched app.
The Property "applist" is a list of applications already installed.
The Property "app" is the name of the application which the user wants to launch.
The property "status" is current operation status of application or set operation. running : App is running or launch app, stopped : App is stopped or stop app.
When an app is launched any currently running app is automatically stopped.

7.178.2 Example URI

/TVappsResURI

7.178.3 Resource type

The Resource Type is defined as: "oic.r.tv.apps".

7.178.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "TV Apps",
    "version": "2021-03-02",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/TVappsResURI" : {
      "get": {
        "description": "This Resource describes an app launch function, which can show an app list
and the launched app. \nThe Property \"applist\" is a list of applications already installed. \nThe
Property \"app\" is the name of the application which the user wants to launch. \nThe property
\"status\" is current operation status of application or set operation. running : App is running or
launch app, stopped : App is stopped or stop app. \nWhen an app is launched any currently running
app is automatically stopped.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current TVapps function state.",
```

```
            "x-example":
              {
                "rt": ["oic.r.tv.apps"],
                "if": ["oic.if.a", "oic.if.baseline"],
                "applist": ["none", "youtube", "netflix", "hulu", "spotify"],
                "app": "youtube",
                "status" : "running"
              },
            "schema": { "$ref": "#/definitions/TVapps" }
          }
      }
    },
    "post": {
      "description": "Launch or stop tv application that the user wants.",
      "parameters": [
        {"$ref": "#/parameters/interface"},
        {
          "name": "body",
          "in": "body",
          "required": true,
          "schema": { "$ref": "#/definitions/TVappsUpdate" },
          "x-example":
            {
              "app": "hulu",
              "status": "running"
            }
        }
      ],
      "responses": {
          "200": {
            "description" : "Show result",
            "x-example":
              {
                "app": "hulu",
                "status": "running"
              },
            "schema": { "$ref": "#/definitions/TVappsUpdate" }
          }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "TVapps" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.tv.apps"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "applist": {
          "description": "The list of the applications already installed. The list shall include
\"none\" as meaning no app launched",
          "items": {
              "type": "string"
          },
          "minItems": 1,
```

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```
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "app": {
            "description": "The name of application which is active or the user wants to launch. Has
to be from the applist.",
            "type": "string"
        },
        "status": {
            "description": "Current operational status of the application. running : App is running,
stopped : App is stopped.",
            "enum": ["running","stopped"],
            "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["applist", "app", "status"]
    },
    "TVappsUpdate" : {
        "properties": {
        "app": {
          "description": "The name of application which the user wants to control.",
          "type": "string"
             },
        "status": {
          "description": "Desired operational status of the application. running : App is running,
stopped : App is stopped.",
          "enum": ["running","stopped"],
          "type": "string"
        }
      },
      "type": "object",
      "required": ["app", "status"]
    }
  }
}
```

7.178.5 Property definition

Table 364 defines the Properties that are part of the "oic.r.tv.apps" Resource Type.

Table 364 – The Property definitions of the Resource with type "rt" = "oic.r.tv.apps".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.

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applist	array: see schema	Yes	Read Only	The list of the applications already installed. The list shall include "none" as meaning no app launched
app	string	Yes	Read Write	The name of application which is active or the user wants to launch. Has to be from the applist.
status	string	Yes	Read Write	Current operational status of the application. running : App is running, stopped : App is stopped.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
app	string	Yes	Read Write	The name of application which the user wants to control.
status	string	Yes	Read Write	Desired operational status of the application. running : App is running, stopped : App is stopped.

7.178.6 CRUDN behaviour

Table 365 defines the CRUDN operations that are supported on the "oic.r.tv.apps" Resource Type.

Table 365 – The CRUDN operations of the Resource with type "rt" = "oic.r.tv.apps".

Create	Read	Update	Delete	Notify
	get	post		observe

7.179 Vendor List

7.179.1 Introduction

This Resource describes the current vendor and supported vendors for an OCF Device (e.g. the set of possible A/C vendors to which an A/C Assistant can connect).
The current vendor can be read or set, setting indicates a desired vendor.
A device may reject an attempt to set a vendor that is not found in supported vendors.
The Property "supportedVendors" is an array of the possible vendor names.
The value of "supportedVendors" is Device specific.
The Property "currentVendor" is one vendor selected from "supportedVendors".
The Property "status" is current operation status when the "currentVendor" is set .

7.179.2 Example URI

/VendorListResURI

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7.179.3 Resource type

The Resource Type is defined as: "oic.r.vendorlist".

7.179.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Vendor List",
    "version": "2021-05-20",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/VendorListResURI": {
      "get": {
        "description": "This Resource describes the current vendor and supported vendors for an OCF
Device (e.g. the set of possible A/C vendors to which an A/C Assistant can connect).\nThe current
vendor can be read or set, setting indicates a desired vendor.\nA device may reject an attempt to
set a vendor that is not found in supported vendors.\nThe Property \"supportedVendors\" is an array
of the possible vendor names.\nThe value of \"supportedVendors\" is Device specific.\nThe Property
\"currentVendor\" is one vendor selected from \"supportedVendors\".\nThe Property \"status\" is
current operation status when the \"currentVendor\" is set . ",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the information for vendorList Resource.",
            "x-example": {
              "rt": ["oic.r.vendorlist"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "supportedVendors": ["none","haier", "gree", "tcl", "lg"],
              "currentVendor": "lg",
              "status": "vendorset"
            },
            "schema": { "$ref": "#/definitions/VendorList" }
          }
        }
      },
      "post": {
        "description": "changes the vendorList.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/VendorListUpdate" },
            "x-example": {
              "currentVendor": "lg"
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "Gives the information for the new currentVendor value ",
            "x-example": {
              "currentVendor": "lg",
              "status":"failed"

            },
```

```
            "schema": { "$ref": "#/definitions/VendorListUpdate" }
          },
          "403": {
            "description" : "This response is generated by the OCF Server when the client sends:\n
An UPDATE with an value for \"currentVendor\" that is not found in\"supportedvendors\" .\n The
server may respond with the current resource representation.",
            "x-example": {
              "supportedVendors": ["none","haier", "gree", "tcl", "lg"],
              "currentVendor": "lg",
              "status":"failed"
            },
            "schema": { "$ref": "#/definitions/VendorListUpdate" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    }
  },
  "definitions": {
    "VendorList" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.vendorlist"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "currentVendor": {
          "description": "The current Vendor selected from \"supportedVendors\".",
          "type": "string"
        },
        "supportedVendors": {
          "description": "The array of the possible vendors.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "status": {
        "description": "Current operation status based on the selected current Vendor.\n
novendor:this is the state when the selected vendor is none. \n processing:this is the state when a
vendor is selected and the device automatically moves to this state.\n venderset:this is the state
when the vendor has been set and the processing that took place has been successful.\n failed:this
is the state when the vendor has been set and the processing that took place was failed. The only
way to come out of this state is to UPDATE \"currentvendor\" with a new vendor. The \"status\" is
only writable when the \"status\" is processing and from that state can be set to either \"failed\"
if the user determines previous processing failed, or to \"vendorset\" if the user determines that
previous processing was successful. ",
        "enum": ["novendor","processing","venderset","failed"],
        "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
```

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```
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.rw",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["currentVendor","supportedVendors","status"]
    },
    "VendorListUpdate" : {
      "title":"update currentVendor ",
      "type": "object",
      "properties": {
         "currentVendor": {
          "description": "The current vendor selected from \"supportedVendors\".",
          "type": "string"
        },
         "status": {
          "description": "The current operation status. Only when the \"status\" is \"processing\",
it is writable and it only can be set to \"failed\" or \"venderset\". The device should reject an
attempt to set the \"status\" to values other than \"failed\" and \"venderset\".And the device
should reject any attempt to update the \"status\" when the \"status\" is not \"processing\".",
          "type": "string"
        }
      }
     }
    }
  }
```

7.179.5 Property definition

Table 366 defines the Properties that are part of the "oic.r.vendorlist" Resource Type.

Table 366 – The Property definitions of the Resource with type "rt" = "oic.r.vendorlist".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
currentVendor	string	Yes	Read Write	The current Vendor selected from "supportedVendors".
supportedVendors	array: see schema	Yes	Read Only	The array of the possible vendors.
status	string	Yes	Read Write	Current operation status based on the selected current Vendor. novendor:this is the state when the selected vendor is none. processing:this is the state when a vendor is selected and the device automatically moves to this state.

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				venderset:this is the state when the vendor has been set and the processing that took place has been successful. failed:this is the state when the vendor has been set and the processing that took place was failed. The only way to come out of this state is to UPDATE "currentvendor" with a new vendor. The "status" is only writable when the "status" is processing and from that state can be set to either "failed" if the user determines previous processing failed, or to "vendorset" if the user determines that previous processing was successful.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource.
currentVendor	string		Read Write	The current vendor selected from "supportedVendors".
status	string		Read Write	The current operation status. Only when the "status" is "processing", it is writable and it only can be set to "failed" or "venderset". The device should reject an attempt to set the "status" to values other than "failed" and "venderset".And the device should reject any attempt to update the "status" when the "status" is not "processing".

7.179.6 CRUDN behaviour

Table 367 defines the CRUDN operations that are supported on the "oic.r.vendorlist" Resource Type.

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Table 367 – The CRUDN operations of the Resource with type "rt" = "oic.r.vendorlist".

Create	Read	Update	Delete	Notify
	get	post		observe

7.180 Dali

7.180.1 Introduction

This Resource describes the DALI write resource, able to convey FF and BF according IEC 62386-104, Digital addressable lighting interface - Part 104: General requirements - Wireless and alternative wired system.
Retrieve on this Resource only returns common Properties.

7.180.2 Well-known URI

/dali

7.180.3 Resource type

The Resource Type is defined as: "oic.r.dali".

7.180.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Dali",
    "version": "2021-02-19",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/dali" : {
      "get": {
        "description": "This Resource describes the DALI write resource, able to convey FF and BF
according  IEC 62386-104, Digital  addressable lighting interface - Part 104: General requirements -
Wireless and alternative wired system.\nRetrieve on this Resource only returns common
Properties.\n",
        "parameters": [
          {"$ref": "#/parameters/interface-baseline"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.dali"],
                  "if": ["oic.if.w", "oic.if.baseline"]
                },
              "schema": { "$ref": "#/definitions/Dali" }
            }
        }
      },
      "post": {
        "description": "The POST can be used to issue an DALI FF frame. The command can be issued as
Multicast (SSM) or as unicast. The Multicast command will have no response. The unicast command can
have a BF response.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
```

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```
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Dali_command" },
            "x-example":
              {
                "prio" : 1,
                "tbus": [2, 3],
                "pld": [3, 5, 6],
                "pld_s": 3
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "The BF response of a unicast command, not required",
              "x-example":
                {
                  "prio" : 1,
                  "tbus": [2, 3],
                  "pld": [3, 5, 6],
                  "pld_s": 3
                },
              "schema": { "$ref": "#/definitions/Dali_command" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.w", "oic.if.baseline"]
    },
     "interface-baseline" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.baseline"]
    }
  },
  "definitions": {
    "Dali": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.dali"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
```

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```
            "enum": [
              "oic.if.w",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object"
    },
    "Dali_command": {
      "properties": {
        "prio": {
          "description": "The priority of the command.",
          "type": "integer",
          "default": 0
        },
        "st": {
          "description": "The command has to be send twice.",
          "type": "boolean",
          "default" : false
        },
        "pld_s": {
          "description": "The amount of integers in the Dali payload.",
          "type": "integer"
        },
        "pld": {
          "description": "Each DALI byte is conveyed as an byte",
          "items": {
            "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/uint8"
          },
          "type": "array"
        },
        "tbus": {
          "description": "The set of  bus identifiers to which the command should be applied.",
          "items": {
            "type": "integer"
          },
          "type": "array",
          "default" : [ 0 ]
        },
        "src": {
          "description": "assigned source address. -1 means not yet assigned by the Application
controller.",
          "type": "integer"
        }
      },
      "type": "object",
      "required": ["pld", "pld_s"]
    }
  }
}
```

7.180.5 Property definition

Table 368 defines the Properties that are part of the "oic.r.dali" Resource Type.

Table 368 – The Property definitions of the Resource with type "rt" = "oic.r.dali".

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema		Read Only	The Resource Type.
n	multiple types: see schema		Read Write	

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id	multiple types: see schema		Read Write	
if	array: see schema		Read Only	The OCF Interface set supported by this Resource.
prio	integer	No	Read Write	The priority of the command.
st	boolean	No	Read Write	The command has to be send twice.
pld_s	integer	Yes	Read Write	The amount of integers in the Dali payload.
pld	array: see schema	Yes	Read Write	Each DALI byte is conveyed as an byte
tbus	array: see schema	No	Read Write	The set of bus identifiers to which the command should be applied.
src	integer	No	Read Write	assigned source address. -1 means not yet assigned by the Application controller.

7.180.6 CRUDN behaviour

Table 369 defines the CRUDN operations that are supported on the "oic.r.dali" Resource Type.

Table 369 – The CRUDN operations of the Resource with type "rt" = "oic.r.dali".

Create	Read	Update	Delete	Notify
	get	post		observe

7.181 DALI Configuration

7.181.1 Introduction

This Resource describes a DALI (addressing) configuration, IEC 62386-104, Digital addressable lighting interface - Part 104: General requirements - Wireless and alternative wired system.

7.181.2 Example URI

/daliconf

7.181.3 Resource type

The Resource Type is defined as: "oic.r.dali.conf".

7.181.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "DALI Configuration",
    "version": "2021-04-22",
    "license": {
        "name": "OCF Data Model License",
        "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
        "x-copyright": "Copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
```

```
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/dali" : {
      "get": {
        "description": "This Resource describes a DALI (addressing) configuration,  IEC 62386-104,
Digital  addressable lighting interface - Part 104: General requirements - Wireless and alternative
wired system.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "",
              "x-example":
                {
                  "rt": ["oic.r.dali.conf"],
                  "if": ["oic.if.baseline", "oic.if.rw"],
                  "bus": 2,
                  "src": 5,
                  "ver": 2
                },
              "schema": { "$ref": "#/definitions/Response" }
            }
        }
      },
      "post": {
        "description": "The POST can be used to set the bus identification or to issue an DALI FF
frame. The command can be issued as Multicast (SSM) or as unicast. The Multicast command will have
no response, the unicast command can have a BF response.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Request" },
            "x-example":
              {
                "bus": 3
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "The BF response of a unicast command",
              "x-example":
                {
                  "bus": 3,
                  "src": 5,
                  "ver": 2
                },
              "schema": { "$ref": "#/definitions/Response" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface" : {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.baseline", "oic.if.rw"]
    }
  },
  "definitions": {
    "Request": {
      "properties": {
        "bus": {
```

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```
          "description": "assign the bus identifier.",
          "type": "integer"
        },
        "src": {
          "description": "assigned source address. -1 means not yet assigned by the Application
controller.",
          "type": "integer"
        }
      },
      "type": "object"
    },
    "Response": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.dali.conf"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "bus": {
          "description": "The assigned bus identifier.",
          "type": "integer"
        },
        "src": {
          "description": "assigned source address. -1 means not yet assigned by the Application
controller.",
          "type": "integer"
        },
        "ver": {
          "description": "version of dali on the device.",
          "type": "integer",
          "enum": [1, 2]
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource. Baseline as default
interface.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["ver"]
    }
  }
}
```


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7.181.5 Property definition

Table 370 defines the Properties that are part of the "oic.r.dali.conf" Resource Type.

Table 370 – The Property definitions of the Resource with type "rt" = "oic.r.dali.conf".

Property name	Value type	Mandatory	Access mode	Description
bus	integer		Read Write	assign the bus identifier.
src	integer		Read Write	assigned source address. -1 means not yet assigned by the Application controller.
rt	array: see schema	No	Read Only	The Resource Type.
bus	integer	No	Read Write	The assigned bus identifier.
src	integer	No	Read Write	assigned source address. -1 means not yet assigned by the Application controller.
ver	integer	Yes	Read Write	version of dali on the device.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	The OCF Interface set supported by this Resource. Baseline as default interface.

7.181.6 CRUDN behaviour

Table 371 defines the CRUDN operations that are supported on the "oic.r.dali.conf" Resource Type.

Table 371 – The CRUDN operations of the Resource with type "rt" = "oic.r.dali.conf".

Create	Read	Update	Delete	Notify
	get	post		observe

7.182 Fire Zone Location

7.182.1 Introduction

This Resource describes a fire zone location configuration. Fire zone is pre-defined in design of building as defined in ISO 7240-13, and all information is managed by fire alarm control unit as described in ISO 7240-2.

7.182.2 Example URI

/FireZoneLocationResURI

7.182.3 Resource type

The Resource Type is defined as: “oic.r.location.firezone”.

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7.182.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Fire Zone Location",
    "version": "2022-11-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/FireZoneLocationResURI" : {
      "get": {
        "description": "This Resource describes the properties associated with the fire zone
location inside building.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current fire zone location. ",
            "x-example": {
              "rt": ["oic.r.location.firezone"],
              "if": ["oic.if.r", "oic.if.baseline"],
              "zoneID": 31,
              "floor": 3,
              "room": "room number 301",
              "facility": "range hood",
            },
            "schema": {"$ref": "#/definitions/Firezonelocation"}
          }
        }
      },
      "post": {
        "description": "Update or set Fire zone Location information.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Firezonelocation" },
            "x-example": {
              "zoneID": 25,
              "floor": 2,
              "room": "shared space",
              "facility": "emergency stair",
            }
          }
        ],
        "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                  "oic.r.location.firezone"
              ],
              "zoneID": 25,
              "floor": 2,
              "room": "shared space",
              "facility": "emergency stair",
            },
            "schema": {
```

```
              "$ref": "#/definitions/Firezonelocation"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.rw", "oic.if.baseline"]
    },
  },
  "definitions": {
    "Firezonelocation" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.location.firezone"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "zoneID": {
          "description": "The Device’s current fire zone location.",
          "type": "number"
        },
        "floor": {
          "description": "The Device’s current floor in the building.",
          "type": "number"
        },
        "room": {
          "description": "The Device’s current room in the building.",
          "type": "string"
        },
        "facilty" {
          "description": "The Device’s attaching facility in the building.",
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
      "type": "object"
    }
```

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```
  }
}
```

7.182.5 Property definition

Table 372 defines the Properties that are part of the “oic.r.location.firezone” Resource Type.

Table 372 – The Property definitions of Resource with type “rt”=”oic.r.location.firezone”.

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
zoneID	Number	Yes	Read Write	The Device’s current fire zone location.
floor	Number	No	Read Write	The Device’s current floor in the building.
room	String	No	Read Write	The Device’s current room in the building.
facility	String	No	Read Write	The Device’s attaching facility in the building.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	

7.182.6 CRUDN behavior

Table 373 defines the CRUDN operations that are supported on the “oic.r.location.firezone” Resource Type.

Table 373 – The CRUDN operations of the Resource with the type “rt”=”oic.r.location.firezone”.

Create	Read	Update	Delete	Notify
	get	post		Observe

7.183 Zone Device List

7.183.1 Introduction

This Resource describes list of fire zone ID and OCF devices for each fire zone. Fire alarm control unit can be read or set, remove device in the list. This resource can be requested by OCF client of fire alarm control unit (e.g., fire station, building manager) to monitor devices in each fire zone location.

7.183.2 Example URI

/ZoneDeviceListResURI

7.183.3 Resource type

The Resource Type is defined as: “oic.r.zonedevicelist”.

7.183.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
```

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```
  "info": {
    "title": "Zone Device List",
    "version": "2022-11-25",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2021 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/ZoneDeviceListResURI": {
      "get": {
        "description": "This Resource describes list of OCF devices for fire alarm system..\nThe
fire alarm control unit can read or write, and send it to OCF client(e.g., fire station, building
manager, etc.) by separating its fire zone location.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {"currentZoneID": 20}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the information for ZoneDeviceList Resource.",
            "x-example": {
              "rt": ["oic.r.vendorlist"],
              "if": ["oic.if.rw", "oic.if.baseline"],
              "currentZoneID": 20,
              "zoneDeviceList": ["heat-01", "co-23", "siren-045"],
              "status": "quiescent"
            },
            "schema": { "$ref": "#/definitions/ZoneDeviceList" }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.r", "oic.if.baseline"]
    }
  },
  "definitions": {
    "ZoneDeviceList" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.ZoneDeviceList"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "currentZoneID": {
          "description": "The current fire zone ID selected from \"zoneList\".",
          "type": "number"
        },
        "zoneDeviceList": {
          "description": "The array of all devices in selected zone.",
          "items": {
            "type": "string"
```

```
          },
          "readOnly": true,
          "type": "array"
        },
        "zoneList": {
          "description": "The array of the existing fire zone IDs.",
          "items": {
            "type": "number"
          },
          "readOnly": true,
          "type": "array"
        },
        "status": {
        "description": "Current operation status based on the selected zone ID.\n Status information
is generated from /fireAlarmStates/ propoerty in /FireAlarmStateResURI/ resource.",
        "type": "string"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["currentZoneID"]
    }
    }
  }
```

7.183.5 Property definition

Table 374 defines the Properties that are part of the “oic.r.fire.state” Resource Type.

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Table 374 - The Property definitions of Resource with type “rt”=”oic.r.zonedevicelist”.

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
currentZoneID	number	Yes	Read Only	The current zone ID requested by OCF client.
zoneDeviceList	array: see schema	Yes	Read Only	The array of the devices in current Zone ID.
zoneList	array: see schema	Yes	Read Only	The array of existing fire zone IDs.
status	string	Yes	Read Only	Current fire state of selected zone ID.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	

7.183.6 CRUDN behavior

Table 375 defines the CRUDN operations that are supported on the “oic.r.zonedevicelist” Resource Type.

Table 375 – The CRUDN operations of the Resource with type “rt”=”oic.r.zonedevicelist”.

Create	Read	Update	Delete	Notify
	get			

7.184 Fire State

7.184.1 Introduction

This Resource describes fire alarm states.

The Property “fireAlarmStates” is an array of possible states defined in ISO 7240-2.

The Property “currentFireAlarmState” is the current fire alarm state value of the OCF device.

7.184.2 Example URI

/FireAlarmStateResURI

7.184.3 Resource type

The Resource Type is defined as: “oic.r.fire.state”.

7.184.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Fire Alarm State",
    "version": "2022-11-15",
    "license": {
```

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```
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/FireAlarmStateResURI": {
      "get": {
        "description": "This Resource describes the fire alarm states on a device.\nThe states can
be read or set, setting indicates a desired state.\nThe Property \"fireAlarmStates\" is an array of
the possible operational states defined in the ISO7240.\nThe Property \"currentFireAlarmState\" is
the current fire alarm state of the device.\nThe Property \"runningTime\" is the ISO8601 encoded
elapsed time in the current operational state.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
          "200": {
            "description" : "RETRIEVES the current fire alarm state.",
            "x-example": {
              "rt": ["oic.r.fire.state"],
              "if": ["oic.if.s", "oic.if.a", "oic.if.baseline"],
              "fireAlarmStates": ["quiescent", "fire alarm", "fault warning", "disablement", "test",
"supervisory conrtol"],
              "currentFireAlarmState": "quiescent",
              "runningTime": "PT15M20S",
            },
            "schema": { "$ref": "#/definitions/FireAlarmState" }
          }
        }
      },
      "post": {
        "description": "Sets the desired fire alarm state.",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/FireAlarmStateUpdate" },
            "x-example": {
              "currentFireAlarmState": "fire alarm",
            }
          }
        ],
        "responses": {
          "200": {
            "description" : "",
            "x-example": {
              "currentFireAlarmState": "fire alarm",
            },
            "schema": { "$ref": "#/definitions/FireAlarmStateUpdate" }
          },
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": ["oic.if.s", "oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
```

```
    "FireAlarmState" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.operational.state"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "currentFireAlarmState": {
          "description": "The current fire alarm state of the device.",
          "type": "string"
        },
        "fireAlarmStates": {
          "description": "The array of the possible fire alarm states.",
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "runningTime": {
          "$ref": "https://openconnectivityfoundation.github.io/core/schemas/oic.types-
schema.json#/definitions/duration"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["fireAlarmStates", "currentFireAlarmState"]
    },
    "FireAlarmStateUpdate" : {
      "properties": {
        "currentFireAlarmState": {
          "description": "The current fire alarm state of the device.",
          "type": "string"
        }
      },
      "type": "object"
    }
  }
}
```

7.184.5 Property definition

Table 376 defines the Properties that are part of the “oic.r.fire.state” Resource Type.

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Table 376 - The Property definitions of Resource with type “rt”=”oic.r.fire.state”.

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
currentFireAlarmState	String	Yes	Read Write	The current fire alarm state of the device.
fireAlarmStates	array: see schema	Yes	Read Only	The array of the possible fire alarm states.
runningTime	multiple types: see schema	No	Read Write	
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	

7.184.6 CRUDN behavior

Table 377 defines the CRUDN operations that are supported on the “oic.r.fire.state” Resource Type.

Table 377 – The CRUDN operations of the Resource with type “rt”=”oic.r.fire.state”.

Create	Read	Update	Delete	Notify
	get	post		Observe

7.185 Emitting

7.185.1 Introduction

This Resource describes the emitting resource, which consists colors and patterns of the light.

7.185.2 Example URI

/EmittingResURI

7.185.3 Resource type

The Resource Type is defined as: “oic.r.light.emitting”.

7.185.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Emitting",
    "version": "2022-11-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "opyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
```

```
  "schemes": ["http"],
  "consumes": ["application/json"],
  "produces": ["application/json"],
  "paths": {
    "/EmittingResURI" : {
      "get": {
        "description": "This Resource describes a emitting function.\nThe Property \"emittingSet\"
is a boolean showing the current emitting status.\nThe Property \"color\" is a integer showing the
current color of emitting.\nThe Property \"colorLists\" is an array of the possible colors available
in this device.\nThe Property \"emittingPeriod\" is an integer showing seconds of emitting period.",
        "parameters": [
          {"$ref": "#/parameters/interface"}
        ],
        "responses": {
            "200": {
              "description" : "RETRIEVES the current emitting state.",
              "x-example":
                {
                  "rt": ["oic.r.light.emitting"],
                  "if": ["oic.if.a", "oic.if.baseline"],
                  "emittingSet": true,
                  "color": "red",
                  "colorLists": ["red", "blue", "yellow"],
                  "emmitingPeriod": 1
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      },
      "post": {
        "description": "Sets the desired emitting status.\n",
        "parameters": [
          {"$ref": "#/parameters/interface"},
          {
            "name": "body",
            "in": "body",
            "required": true,
            "schema": { "$ref": "#/definitions/Emitting" },
            "x-example":
              {
                "color": "yellow",
              }
          }
        ],
        "responses": {
            "200": {
              "description" : "Indicates that the emitting was changed.\nThe new emitting color is
provided in the response.\n",
              "x-example":
                {
                  "color": "yellow"
                },
              "schema": { "$ref": "#/definitions/Emitting" }
            },
            "403": {
              "description": "This response is generated by the OCF Server when the client sends:\n
An update with an out of range property value for colorLists.\nThe server responds with the current
resource representation.\n",
              "x-example":
                {
                  "color": "red"
                },
              "schema": { "$ref": "#/definitions/Dimming" }
            }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
```

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```
      "type": "string",
      "enum": ["oic.if.a", "oic.if.baseline"]
    }
  },
  "definitions": {
    "Eimming" : {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": ["oic.r.light.emitting"],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "emittingSet": {
          "description": "The current status of emiiting.",
          "type": "boolean"
        },
        "color": {
          "description": "The current color of emitting light."
          "type": "string"
        },
        "colorLists": {
          "description": "The array of the possible colors available in this device."
          "items": {
            "type": "string"
          },
          "readOnly": true,
          "type": "array"
        },
        "emittingPeriod": {
          "description": "The period of emitting (seconds)."
          "type": "integer"
        },
        "n": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
            "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "range": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/range_integer"
        },
        "step": {
            "$ref":
"https://openconnectivityfoundation.github.io/IoTDataModels/schemas/oic.baseresource.properties-
schema.json#/definitions/step_integer"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.a",
              "oic.if.baseline"
            ],
            "type": "string"
          },
          "minItems": 2,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
```

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```
        }
      },
      "type": "object",
      "required": ["emittingSetting"]
    }
  }
}
```

7.185.5 Property definition

Table 378 defines the Properties that are part of the “oic.r.light.emitting” Resource Type.

Table 378 - The Property definitions of Resource with type “rt”=”oic.r.light.emitting”.

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	No	Read Only	The Resource Type.
emittingSet	boolean	Yes	Read Write	The current status of the resource.
color	string	No	Read Write	The current color of emitting light.
colorLists	array: see schema	No	Read Only	The array of the possible colors available in this device.
emittingPeriod	integer	No	Read Write	The period of emitting.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read Only	

7.185.6 CRUDN behavior

Table 379 defines the CRUDN operations that are supported on the “oic.r.light.emitting” Resource Type.

Table 379 – The CRUDN operations of the Resource with type “rt”=”oic.r.light.emitting”.

Create	Read	Update	Delete	Notify
	get	post		Observe

7.186 Medication Monitor Type

7.186.1 Introduction

This Resource describes the properties associated with Medication Monitor Type. The “fixed” represents a medication monitor reports “relative location” of medicine was taken within the package. Therefore, medicine type which is administrated by a medication monitor can be tablet, packages or similar types. The “variable” represents a medication monitor reports how much medicine was taken or injected using the “unit” property presented in “oic.r.med.dispensed.variable”. Therefore, medicine type which is administrated by a medication monitor can be liquid, gas or similar types. The “type” Property is a read-only value that is provided by the Server.

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7.186.2 Example URI

/MedicationMonitorTypeResURI

7.186.3 Resource type

The Resource Type is defined as "oic.r.med.type".

7.186.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Medication Monitor Type",
    "version": "2023-09-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "Copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/MedicationMonitorTypeResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with medication monitor
type.\nThe “fixed” represents a medication monitor reports “relative location” of medicine was taken
within the package. Therefore medicine type which is administrated by Medication Monitors can be
tablet, packages or something like these.\nThe “variable” represents a medication monitor reports
how much medicine was taken or injected using the “unit” property  presented in
“oic.r.med.dispensed.variable”.). Therefore medicine type which is administrated by Medication
Monitors can be liquid, gas or something like these.\nThe type Property is a read-only value that is
provided by the Server.",
"parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
          "responses": {
          "200": {
            "description": "",
            "x-example": {
              "rt": [
                "oic.r.med.type"
              ],
              "type": "fixed"
            },
            "schema": {
              "$ref": "#/definitions/MedicationMonitorType"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
```

```
        "oic.if.r",
        "oic.if.baseline"
      ]
    }
  },
    "definitions": {
    "MedicationMonitorType": {
      "properties": {
        "rt": {
          "description": "Resource Type",
          "items": {
            "enum": [
              "oic.r.med.type"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "type": {
          "description": "Type of a medication monitor type.",
          "enum": [
            "fixed",
            "variable"
          ],
          "readOnly": true,
          "type": "string"
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource",
          "items": {
            "enum": [
              "oic.if.r",
              "oic.if.baseline"
            ],
            "type": "string",
            "maxLength": 64
          },
          "minItems": 1,
          "readOnly": true,
          "uniqueItems": true,
          "type": "array"
        }
      },
      "type": "object",
      "required": ["type"]
    }
  }
}
```

7.186.5 Property definition

Table 380 defines the Properties that are part of the “oic.r.med.type” Resource Type.

Table 380. The Property definitions of the Resource with type “rt”="oic.r.med.type“

Property name	Value type	Mandatory	Access mode	Description

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rt	array: see schema	Yes	Read only	Resource Type
type	string	Yes	Read only	Type of Medication Monitor (fixed or variable) (1 fixed | 2 variable)
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read only	The OCF Interface set supported by this Resource

7.186.6 CRUDN behavior

Table 381 defines the CRUDN operations that are supported on the "oic.r.med.type" Resource Type.

Table 381. The CRUDN operation of the Resource with type “rt”="oic.r.med.type".

Create	Read	Update	Delete	Notify
	get			

7.187 Medication information

7.187.1 Introduction

This Resource describes the Properties associated with medicine information consisting of relative location of medicine within the package, medication dosage interval, and expiration date.

7.187.2 Example URI

/MedicationInformationResURI

7.187.3 Resource type

The Resource Type is defined as "oic.r.med.medication.info".

7.187.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Medication Information",
    "version": "2023-09-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
```

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```
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/MedicationInformationResURI": {
      "get": {
        "description": "This Resource describes the properties associated with medicine information
consisting of relative location of medicine within the package, medication dosage interval, and
expiration date.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "RETRIEVES the medicine information which is loaded.",
            "x-example": {
              "rt": [
                "oic.r.med.medication.info"
              ],
              "if": [
                "oic.if.rw",
                "oic.if.baseline"
              ],
              "medicinelocation": [
                3,
                4,
                6,
                7
              ],
              "interval": 360,
       "expiredate": "2025-09-15"
            },
            "schema": {
              "$ref": "#/definitions/MedicationInformation"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.rw",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "MedicationInformation": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.med.medication.info"
            ],
            "maxLength": 64,
            "type": "string"
```

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```
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "medicinelocation": {
          "description": "relative location of medicine within the package.",
            "items": {
              "minItems": 1,
               "type": "number"
            },
            "type":"array",
            "readOnly":false
        }
        "interval":{
          "desciption": "medication dosage interval",
          "type":"number",
          "readOnly":false
        },
        "expiredate":{
          "desciption": "expiration date of medicines within the package",
          "type":"string",
          "readOnly":false
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.rw"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "type": "object"
      }
    }
  }
}
```

7.187.5 Property definition

Table 382 defines the Properties that are part of the “oic.r.med.medication.info” Resource Type.

Table 382. The Property definitions of the Resource with type “rt”="oic.r.med.medication.info”

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read only	Resource Type

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medicinelocation	array	Yes	Read Write	It sets or reports which “relative location” of medicine is loaded within the package as numeric. In case of “variable medicine type”, this attribute should be set “0”
interval	number	No	Read Write	It can be used to set or report the interval between medication doses. The interval is set as minute.
expiredate	string	No	Read Write	The date time using RFC3339 datetime format. (e.g: 2023-09-15T10:00:30:00Z, 2023-09-15T10:00:30:00+09:00).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read only	The OCF Interface set supported by this Resource

7.187.6 CRUDN behavior

Table 383 defines the CRUDN operations that are supported on the "oic.r.med.medication.info". Resource Type

Table 383. The CRUDN operation of the Resource with type “rt”="oic.r.med.medication.info".

Create	Read	Update	Delete	Notify
	get	post		

7.188 Fixed Medication Dispensed

7.188.1 Introduction

This Resource describes the Properties associated with a person’s medication intake status. This property should be used in case of medicine is loaded as “relative location” within the package.

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7.188.2 Example URI

/FixedMedicationDispensedResURI

7.188.3 Resource type

The Resource Type is defined as "oic.r.med.dispensed.fixed".

7.188.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Fixed Medication Dispensed",
    "version": "2023-09-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/FixedMedicationDispensedResURI": {
      "get": {
        "description": "This Resource describes the properties associated with the fixed type
medication dispenser which is used in case of medicine is located as  relative location within the
package.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "RETRIEVES the relative location of dispensed medicine within the
package.",
            "x-example": {
              "rt": [
                "oic.r.med.dispensed.fixed"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "medicationdispensed": 1,
              "dispensedtime": "2023-09-15T12:33:33+09:00"
            },
            "schema": {
              "$ref": "#/definitions/FixedMedicationDispensed"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
```

```
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "FixedMedicationDispensed": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.med.dispensed.fixed"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "medicationdispensed": {
          "description": "The relative location of dispensed medication within the package.",
          "type": "number",
          "readOnly":true
        },
        "dispensedtime":{
          "desciption": "the date and time when the medicine is dispensed",
          "type":"string",
          "readOnly":true
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "type": "object"
      }
    }
  }
}
```

7.188.5 Property definition

Table 384 defines the Properties that are part of the “oic.r.med.dispensed.fixed” Resource Type.

Table 384. The Property definitions of the Resource with type “rt”="oic.r.med.dispensed.fixed”

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Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read only	Resource Type
medicationdispensed	number	Yes	Read only	It reports which “relative location” of medicine is taken within the package as number.
dispensedtime	string	Yes	Read only	The date time using RFC3339 datetime format. (e.g: 2023-09-15T10:00:30:00Z, 2023-09-15T10:00:30:00+09:00).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read only	The OCF Interface set supported by this Resource

7.188.6 CRUDN behavior

Table 385 defines the CRUDN operations that are supported on the "oic.r.med.dispensed.fixed". Resource Type

Table 385. The CRUDN operation of the Resource with type “rt”="oic.r.med.dispensed.fixed".

Create	Read	Update	Delete	Notify
	get			Observe

7.189 Variable Medication Dispensed

7.189.1 Introduction

This Resource describes the Properties associated with a persons’ medication intake or injection when the medicine has variable mass such as liquid or gas. The “Unit” is a single value that is one of mg, ml or IU (International units). Properties are read-only values that are provided by the Server.

7.189.2 Example URI

/VariableMedicationDispensedResURI

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7.189.3 Resource type

The Resource Type is defined as "oic.r.med.dispensed.variable".

7.189.4 OpenAPI 2.0 definition

```
{
  "swagger": "2.0",
  "info": {
    "title": "Variable Medication Dispensed",
    "version": "2023-09-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/VariableMedicationDispensedResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with a person’s medication
intake or injection when the medicine has variable mass such as liquid or gas.\nThe unit is a single
value that is one of mg, ml or IU(International units).\nProperties are read-only values that are
provided by the Server.",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "RETRIEVES the mass of taken or injected medicine.",
            "x-example": {
              "rt": [
                "oic.r.med.dispensed.variable"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "medicationdispensed": 10.0,
              "dispensedtime": "2023-09-15T12:33:33+09:00",
              "units": "ml",
            },
            "schema": {
              "$ref": "#/definitions/VariableMedicationDispensed"
            }
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
```

```
      ]
    }
  },
  "definitions": {
    "VariableMedicationDispensed": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.med.dispensed.variable"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "medicationdispensed": {
          "description": "the mass of taken or injected medicine.",
          "readOnly": true,
          "type": "number"
        },
        "units": {
          "description": "Unit for the amount of medication taken",
          "enum": [ "mL", "mg", "IU" ],
          "readOnly": true,
          "type": "string",
          "default": "mL"
         },
        "dispensedtime":{
          "desciption": "the date and time when the medicine is dispensed",
          "type":"string",
          "readOnly":true
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "type": "object"
      }
    }
  }
}
```

7.189.5 Property definition

Table 386 defines the Properties that are part of the “oic.r.med.dispensed.variable” Resource Type.

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Table 386. The Property definitions of the Resource with type "rt"="oic.r.med.dispensed.variable"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read only	Resource Type
medicationdispensed	number	Yes	Read only	It reports how much medicine is injected or taken as numeric.
unit	string	Yes	Read only	It reports units for is injected or taken medicine. mg | ml | IU (International units)
dispensedtime	string	Yes	Read only	The date time using RFC3339 datetime format. (e.g: 2023-09-15T10:00:30:00Z, 2023-09-15T10:00:30:00+09:00).
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read only	The OCF Interface set supported by this Resource

7.189.6 CRUDN behavior

Table 387 defines the CRUDN operations that are supported on the "oic.r.med.dispensed.variable". Resource Type

Table 387. The CRUDN operation of the Resource with type "rt"="oic.r.med.dispensed.variable".

Create	Read	Update	Delete	Notify
	get			Observe

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7.190 Status reporter

7.190.1 Introduction

This Resource describes the Properties associated with status of a medication monitor. The “Status Reporter” Property is a read-only value that is provided by the Server. Provided values are as Table 388.

Table 388. Value sets for status of medication monitors

Property name	Value type
medication-not-dispensed-as-expected	A medication dosage was not dispensed within the regimen allowed timing
medication-dispensed-unexpectedly	A medication was dispensed outside the regimen allowed timing
medication-unfit	The medication monitor has determined that the medication has become unfit
medication-expiration	The medication monitor has determined that the medication has expired
medication-course-complete	All the medication for the current course has been dispensed
medication-taken-incorrectly	The medication monitor has determined that the medication is being taken incorrectly
medication-course-reloaded	The course of medication has been reloaded
monitor-tamper	The medication monitor has detected tampering
monitor-environmental-exceeded-high	The medication monitor has determined that the environment has exceeded the safe high levels
monitor-environmental-exceeded-low	The medication monitor has determined that the environment has exceeded the safe low levels
monitor-inoperable	The medication monitor is not able to operate
consumer-non-compliant-yellow	The non-compliance has reached a level that is deemed somewhat serious (advising may be required)

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consumer-non-compliant-red	The non-compliance has reached a level that is deemed very serious (intervention needed)
consumer-side-effects	The medication monitor has determined that the person is suffering side effects

7.190.2 Example URI

/StatusReporterResURI

7.190.3 Resource type

The Resource Type is defined as "oic.r.status.reporter".

7.190.4 OpenAPI 2.0 definition

```
{  "swagger": "2.0",
  "info": {
    "title": "Status Reporter",
    "version": "2023-09-15",
    "license": {
      "name": "OCF Data Model License",
      "url":
"https://github.com/openconnectivityfoundation/core/blob/e28a9e0a92e17042ba3e83661e4c0fbce8bdc4ba/LI
CENSE.md",
      "x-copyright": "copyright 2020 Open Connectivity Foundation, Inc. All rights reserved."
    },
    "termsOfService": "https://openconnectivityfoundation.github.io/core/DISCLAIMER.md"
  },
  "schemes": [
    "http"
  ],
  "consumes": [
    "application/json"
  ],
  "produces": [
    "application/json"
  ],
  "paths": {
    "/StatusReporterResURI": {
      "get": {
        "description": "This Resource describes the Properties associated with status of a
medication monitor. The status reporter Property is a read-only value that is provided by the
Server.\n",
        "parameters": [
          {
            "$ref": "#/parameters/interface"
          }
        ],
        "responses": {
          "200": {
            "description": "RETRIEVES the status of the medication monitors.",
            "x-example": {
              "rt": [
                "oic.r.status.reporter"
              ],
              "if": [
                "oic.if.s",
                "oic.if.baseline"
              ],
              "status": "medication-dispensed-unexpectedly",
              "statustime": "2023-09-15T12:33:33+09:00"
            },
            "schema": {
              "$ref": "#/definitions/StatusReporter"
            }
```

```
          }
        }
      }
    }
  },
  "parameters": {
    "interface": {
      "in": "query",
      "name": "if",
      "type": "string",
      "enum": [
        "oic.if.s",
        "oic.if.baseline"
      ]
    }
  },
  "definitions": {
    "StatusReporter": {
      "properties": {
        "rt": {
          "description": "The Resource Type.",
          "items": {
            "enum": [
              "oic.r.status.reporter"
            ],
            "maxLength": 64,
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "status": {
          "description": "The status of the medication monitors.",
          "enum":[
            "medication-not-dispensed-as-expected",
            "medication-dispensed-unexpectedly",
            "medication-unfit",
            "medication-expiration",
            "medication-course-complete",
            "medication-taken-incorrectly",
            "medication-course-reloaded",
            "monitor-tamper",
            "monitor-environmental-exceeded-high",
            "monitor-environmental-exceeded-low ",
            "monitor-inoperable",
            "consumer-non-compliant-yellow",
            "consumer-non-compliant-red",
            "consumer-side-effects"
          ],
          "type": "string",
          "readOnly":true
        },
        "statustime":{
          "desciption": "the date and time which medication status is reported.",
          "type":"string",
          "readOnly":true
        },
        "n": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/n"
        },
        "id": {
          "$ref":
"https://openconnectivityfoundation.github.io/core/schemas/oic.common.properties.core-
schema.json#/definitions/id"
        },
        "if": {
          "description": "The OCF Interface set supported by this Resource.",
          "items": {
```

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```
            "enum": [
              "oic.if.baseline",
              "oic.if.s"
            ],
            "type": "string"
          },
          "minItems": 1,
          "uniqueItems": true,
          "readOnly": true,
          "type": "array"
        },
        "type": "object"
      }
    }
  }
}
```

7.190.5 Property definition

Table 389 defines the Properties that are part of the "oic.r.status.reporter" Resource Type.

Table 389. The Property definitions of the Resource with type “rt”="oic.r.status.reporter"

Property name	Value type	Mandatory	Access mode	Description
rt	array: see schema	Yes	Read only	Resource Type
medmonitorstatus	string	No	Read only	It reports status of a medication monitor.
n	multiple types: see schema	No	Read Write	
id	multiple types: see schema	No	Read Write	
if	array: see schema	No	Read only	The OCF Interface set supported by this Resource

7.190.6 CRUDN behavior

Table 390 defines the CRUDN operations that are supported on the "oic.r.status.reporter" Resource Type

Table 390. The CRUDN operation of the Resource with type “rt”="oic.r.status.reporter".

Create	Read	Update	Delete	Notify
	get			Observe

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