

SYSTEM UPDATES – HISTORY

Version 5.9.1 (2025-12-16)

Compatibility

ride-cli >= 1.1.1 (latest: <https://download.franka.de/app-development-1.1.1.zip>)

libfranka >= 0.18.0 (latest: <https://github.com/frankarobotics/libfranka/tree/0.18.0>)

Functional add-ons

- Provide workflow-based sidebar. Dividing execution and programming related workflows.

Bugfixes

The most important bugfixes of this system version are:

- Fixed an issue where it was not possible to close brakes after releasing control.
- Fixed an issue where it was not possible to manually re-initialize the Franka Hand when power on behavior was set to automatic.
- Fixed an issue where loading end effector profiles can take very long in First Start
- Fixed an issue where some robots used the wrong robot model internally, which could lead to performance deterioration and drifting.

For App development

Deprecation Notice: Motion API v1 is marked as deprecated and is going to be entirely replaced by Motion API v2. In a later system version, only Motion API v2 is going to be supported.

Known issues

- Downgrading to a system version smaller than 5.8.0 requires a manual factory reset afterward! Backup all data before downgrading.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.
Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.9.0 (2025-11-05)

Compatibility

ride-cli >= 1.1.1 (latest: <https://download.franka.de/app-development-1.1.1.zip>)

libfranka >= 0.18.0 (latest: <https://github.com/frankarobotics/libfranka/tree/0.18.0>)

Functional add-ons

- Provide Jogging in joint space. Allow movement of single joints in the sidebar from Desk, in Test&Jog mode.
- Enables asynchronous joint position control with low-frequency updates via the FCI.
- Enables FCI users to access/reach the same joint position limits as specified in the robot datasheet.

Bugfixes

The most important bugfixes of this system version are:

- Fixed an issue where a single temperature sensor reading could cause a non-recoverable safety error. Sensor readings are now taken over a period of time.
- Fixed an issue where fine pose adjusting poses is not possible with a “not valid frame” error message.
- Fixed an issue where the shutdown and reboot buttons won't work properly in certain cases.
- 20% improved communication quality when using FCI.
- Improved controller stability and stopping behavior.
- Improved stability of the OPC UA service.

For App development

Deprecation Notice: Motion API v1 is marked as deprecated and is going to be entirely replaced by Motion API v2. In a later system version, only Motion API v2 is going to be supported.

In this system version, the following changes have been introduced:

- Removed force parts of Motion API v1 (ApplyForce, SetForce, SetForceProfile, StopForce, MoveSingleJoint, MoveSingleJointPTP).

Known issues

- Downgrading to a system version smaller than 5.8.0 requires a manual factory reset afterward! Backup all data before downgrading.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including

validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.8.2 (2025-09-24)

Compatibility

ride-cli >= 1.1.1 (latest: <https://download.franka.de/app-development-1.1.1.zip>)
libfranka >= 0.15.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.15.0>)

Bugfixes

The most important bugfixes of this system version are:

- Fixed an issue, where joint position errors might have been present after having turned off the system improperly.

For App development

Deprecation Notice: Motion API v1 is marked as deprecated and is going to be entirely replaced by Motion API v2. In a later system version, only Motion API v2 is going to be supported.

Known issues

- Downgrading to a system version smaller than 5.8.0 requires a manual factory reset afterward! Backup all data before downgrading.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.
Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.8.1 (2025-07-30)

Compatibility

ride-cli >= 1.1.1 (latest: <https://download.franka.de/app-development-1.1.1.zip>)
libfranka >= 0.15.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.15.0>)

Bugfixes

The most important bugfixes of this system version are:

- Franka Hand: Fixed an issue to support Faulhaber motors with MC V3.0 controllers alongside MC V2.5.
- Fixed an issue where the optimized *App*-parameters could not be applied in *Desk*, if the *Optimize Group* only contained a single *App*.
- Fixed communication issues in FCI mode.

For App development

Deprecation Notice: Motion API v1 is marked as deprecated and is going to be entirely replaced by Motion API v2. In a later system version, only Motion API v2 is going to be supported.

Known issues

- Downgrading to a system version smaller than 5.8.0 requires a manual factory reset afterward! Backup all data before downgrading.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.
Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.8.0 (2025-04-23)

Compatibility

ride-cli >= 1.1.1 (latest: <https://download.franka.de/app-development-1.1.1.zip>)

libfranka >= 0.15.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.15.0>)

Functional add-ons

- Introducing Desk API. Desk API enables programmatic configuration and administration of FR3s. It includes opening the brakes, activating FCI, clearing safety violations and much more!
- Introducing the calibration routine that lets user automatically re-calibrate the robot's torque sensors. Start the automatic calibration from Settings!
- Implement a new software update experience that replaces the Franka World tab in Settings.
- Adding end user specific log files that are downloadable from Settings including event and cyclic data entries. The logfiles are not encrypted and can be read by the user.
- Updated the Sidebar visible in Desk and Settings. Added a 3d visualization and split the control into different tabs.
- Prepare support for system downgrade of future system image versions to system image versions >= 5.8.0.
- Run initiating motion countdown for moving robot to park pose.

Bugfixes

The most important bugfixes of this system version are:

- Fixed an issue where saving many poses failed.
- Fixed an issue where grasp/release related apps showed incorrect max gripper width after reboot.
- Fixed an issue with jumping focus in Desk execution.
- Fixed wrong number rounding in watchman / the safety report.
- Ensure that timeline selection menu is closed on simple left or right click.
- Ensure that inertia is consistent if mass is 0, inform user that nonzero end effector inertia will be ignored if end effector mass is 0.
- Fixed an issue where clicking on the task during multi-selection could have opened the parameter screen of the task and an issue where dialogs would not trap focus, causing unexpected behavior on keyboard input.
- Fixed a regression that caused errors occurring during upload of an update file in the software update screen to display no error details.
- Fixed an issue related to the learning service where the display of the optimization process was incorrect.
- Fixed an issue where you could have lost the SPoC token, if you refreshed the page multiple times.
- Prevent manual initialization of the Franka hand during automatic homing to avoid internal error and home gripper automatically, if brakes are opened after an SMSS violation.

- Fixed an issue where FCI activation with invalid safety settings led to an internal error and an issue where abortion of the FCI activation, before the work execution wait time had been elapsed, would have led to an internal error.
- Fixed a bug not showing the validation error messages in the edit profile screen of the Settings tab.
- Fixed an issue where nested tasks would not properly claim space inside a task when they expand during execution.
- Prevent operating mode switch from Execution to Programming if external enabling device is pressed.
- Fixed an issue where the stop button was available for Franka hand homing.
- Solved issues related to the self-collision check, i.a. self-collisions can be detected while external torque control is active.
- Fixed an issue that caused clicking on menu items in the header having no effect.
- Fixed an issue where a lock joint command would not wait for a running execution to stop.
- General improvements related to the initialization of the robot (system start, TD2 self-test).

For App development

Deprecation Notice: Motion API v1 is marked as deprecated and is going to be entirely replaced by Motion API v2. In a later system version, only Motion API v2 is going to be supported.

Known issues

- Downgrading to a system version smaller than 5.8.0 requires a manual factory reset afterward! Backup all data before downgrading.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.7.2 (2025-01-17)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-1.1.0.zip>)

libfranka >= 0.15.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.15.0>)

Bugfixes

The most important bugfixes of this system version are:

- Fixed an issue where gripper operations (e.g. grasping) were failing frequently.
- Fixed a memory leak in the OPC UA service.
- Fixed an issue causing vibrations during repeating a motion with the same pose.
- Fixed an issue where a self-collision error prevented the joint position error recovery.
- Fixed an issue with FCI where a joint position limit violation was not recoverable via `robot.automaticErrorRecovery()`.
- Fixed FCI position commands to allow the robot to start from its current position.

Known issues

- Downgrading to a system version smaller than 5.7.2 requires a manual factory reset afterward! Backup all data before downgrading.
- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.7.1 (2024-10-16)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-1.1.0.zip>)

libfranka >= 0.14.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.14.1>)

Bugfixes

The most important bugfixes of this system version are:

- Fixed a bug with the EndEffector Profiles where it does not allow to initialize the Franka hand.
- Fixed a bug with the EndEffector Profiles where the page would not load reliably.

Known issues

- Downgrading to a system version smaller than 5.7.1 requires a manual factory reset afterward! Backup all data before downgrading.
- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the "work" scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.7.0 (2024-10-01)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-1.1.0.zip>)
libfranka >= 0.14.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.14.1>)

Functional add-ons

- Introduce EndEffector Devices and Profiles: Users can now upload Devices and create multiple Profiles from these Devices with different mechanical data.
- Dynamics computation via Pinocchio (s.a. libfranka release notes).
- Perform Task migrations on Task import and bundle upgrade. See App development section for further information.
- Settings dashboard is now more structured and presents information better.
- Changed the appearance of the timeline in tasks to resemble a group more. The functionality has stayed the same.

Bugfixes

The most important bugfixes of this system version are:

- Fix for motion not finished near singularity.
- Fix reboot buttons do not work when getting stuck in start-up process.
- Fix pilot stays green during joint limit violation.
- Fix pilot LEDs do not lighten up during teaching.
- Show appropriate message in desk if safety settings are not valid.
- Fix activating FCI possible without initiating motion.
- Fixed some internal issues for more stability in the system.

For App development

- Ride-cli 1.1.0 is now available (see link above) with the following changes:
 - Support Task migration (add migrations folder to bundle; add documentation for Task migration; add option to print migration logs on bundle installation; show task migration logs and errors).
 - Add 'bundle format' command for formatting If files.

Known issues

- Downgrading to a system version smaller than 5.7.0 requires a manual factory reset afterward! Backup all data before downgrading.
- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the "work" scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.
Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.6.0 (2024-03-15)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-1.0.0.zip>)

libfranka >= 0.13.2 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.13.3>)

Functional add-ons

- Updated FRANKA PRODUCTION 3 product manuals.
- Updated SSL certificate for robot.franka.de.

Known issues

- When downgrading to a system version smaller than 5.6.0 it can happen that changes in Tasks or complete Tasks might be lost. Backup all Tasks before downgrading.
- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.5.0 (2024-02-26)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-1.0.0.zip>)
libfranka >= 0.13.2 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.13.3>)

Functional add-ons

- Copy Paste as native Desk function via right click menu on selected Task elements
- Backup and restore of safety settings in Watchman. Uploaded safety settings will be shown in Drafts.
- Visualization for Franka Hand in Settings and easier way to configure TCP.
- Create and save end effectors.
- Upload of end effector bundles to visualize end effector devices.
- Updated all recovery dialogs to more easily guide the user through the recovery.
- Franka World connection now uses `iot.franka.world:443` for better compatibility with firewalls.
- Changes in the OPC UA service:
 - OPC UA Service now supports Siemens S7 and Beckhoff PLC connection.
 - BREAKING: Change input argument name to ``key`` of the method ``Read`` of ``KeyPoseMap``.
- App optimization has been added and can be used with the new optimize Group

Bugfixes

The most important bugfixes of this system version are:

- Removed a feature where it was possible to select Apps via a selection box but the selection was confusing.
- Providing a stiffer elbow locking and more stable system when guiding.

For App development

- Ride-cli 1.0.0 is now available (see link above) with the following changes:
 - Fix wrong console output when stopping initiating motion.
 - Improve console output when trying to start non-existing state machine.
 - Fix parsing of `ride-api` errors.
 - Fix race condition in execution tracing. It could happen that execution updates are missed when starting execution.
 - Add support for dynamic links (requires system version `>= 5.5.0`).
 - Add documentation for experimental Group features.
 - Add debugger.
 - Support visualization of state diagrams in Visual Studio Code (requires VS Code plug-in ``RIDE by Franka Robotics``).

For libfranka users

- Encountering `"max_path_pose_deviation_violation"` when running FCI `franka::Torques` is resolved.

Known issues

- When downgrading to a system version smaller than 5.5.0 it can happen that changes in Tasks or complete Tasks might be lost. Backup all Tasks before downgrading.
- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.
- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.4.0 (2023-09-27)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-0.9.0.zip>)
libfranka >= 0.10.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.12.1>)

Functional add-ons

- Added joint position adjustment to Fine Pose Adjustment dialog.
- Allow to teach a Tool Center Point (TCP) via a subroutine from Settings.
- Allow to disable groups in tasks.
- Allow to recover several joint errors that formerly needed a reboot of the whole system.
- All the non-safe violations are now automatically recoverable.
- Tracking of elbow within linear motions can now be disabled.

Bugfixes

The most important bugfixes of this system version are:

- Fixed a bug that would lead to sporadic failure of the brake opening routine (Error 0x4E4).
- Fixed multiple bugs when aligning the conditions for shutdowns and reboots in the Franka WebUI.
- Fixed multiple bugs when aligning the conditions for opening of the brakes in the Franka WebUI.
- Fixed a bug where it could happen that after a boot-up the robot temporarily showed the wrong base led color.
- Fixed a bug that after logging out, the user still had control of the robot.
- Fixed a bug that it was possible to change group parameters when non-existing groups were used in the task.
- Fixed a bug causing vibrations of joints 5, 6, and 7.
- Fixed a bug causing long waiting time at motion finish.
- Fixed bugs causing infinite stopping time when using interpolated joint motions.

For app development

- Ride-cli 0.9.0 is now available (see link above) with the following changes:
 - Extend element API with “traverse” method and “children” property.
 - Integration of If-language-server.
 - Add section to the tutorial about installing ride-cli on Windows using WSL.

Known issues

- When downgrading to a system version smaller than 5.4.0 it can happen that changes in tasks or complete tasks might be lost. Backup all tasks before downgrading.
- When updating from a system image version <= 5.1.2, a system upgrade requires to sync with Franka World two times due to statemachine updates, and a reset to factory defaults of the safety configuration.

- Starting with system version 5.4.0 the default safety configuration does not contain a default configuration for the “work” scenario anymore and needs to be set up by the safety operator, including validation of the safety configuration.

Note: It is also possible to reset the safety configuration to factory defaults and to use this as a starting point for your individual safety setup.

Version 5.3.2 (2023-07-03)

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-0.8.0.zip>)
libfranka >= 0.10.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.10.0>)

Functional add-ons

- Updated user manuals for the fp3

Bugfixes

The most important bugfixes of this system version are:

- Fixed a bug where the user was stuck in a logout loop in Desk
- Fixed a bug where an execution warning for pending operation calls was shown in Desk although there were no pending operations
- Fixed a bug that would lead to sporadic failure of the brake opening routine (Error 0x4E4)
- Fixed a bug which prevented storing the current pose on power loss of the system and therefore triggered an error at next reboot (SafePosReference).
- Fixed a bug which sporadically lead to a non-recoverable safety error during handguiding.
- Fixed the bug introducing the offset to TCP position after reboot.
 - WARNING: This might cause the (one time) reteaching of apps requiring high positional precision

Known issues

- When downgrading to a system version smaller than 5.3.1 it can happen that changes in tasks or complete tasks might be lost. Backup all tasks before downgrading.
- When updating from a system image version <= 5.1.2, a system upgrade requires to sync with Franka World two times due to statemachine updates.
- When updating from a system image version <= 5.1.2, safety-system update changes CRC of safety configs and requires manual safety-config factory reset.
- Starting with system image version 5.3.0, safety uses not only the arm serial number to identify the system but also regards the article number in order to prevent potential confusion of systems in the future. As this identification is mandatory for all spatial (Cartesian) safety functions, those functions require re-validation.

Version 5.3.1 (2023-05-16)

Important: This update will invalidate custom safety rules. The safety operator can revalidate them in Watchman after the update has been completed. See “known issues” for further information.

Compatibility

ride-cli >= 0.5.0 (latest: <https://download.franka.de/app-development-0.8.0.zip>)

libfranka >= 0.10.0 (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.10.0>)

Functional add-ons

- Hold-to-run actions support touch displays.
- Sensitive borders allow dragging apps along the timeline by moving the visible section along with the dragging.
- OPC UA service documentation now includes an example for a C# client implementation.
- OPC UA service now allows to activate/deactivate FCI programmatically.

Bugfixes

The performance of both programming and execution have been significantly improved. In particular, the following aspects:

- Reduced execution time of very complex tasks
- Reduced time for switching between huge tasks
- Reduced response time for adding/deleting/moving apps in complex tasks

The most important bugfixes of this system version are:

- Update user info in Watchman if user logged out in another tab.
- Pilot Disk buttons (Pilot Mode, Save, Enter, Cancel) are lit in correct color during programming.
- Allow to apply shop floor and DHCP network configs in one transaction.
- Fixed potential robot freeze due to external service calls.
- When disabling the Modbus service, Modbus apps are immediately invalid now instead of being valid until the next reboot.
- When closing an OPC UA connection from client side, the control token is released immediately (~100ms) now, instead of sometimes being blocked for ~10 seconds.
- Fixed issue where robot ended up in a non-recoverable safety error due to “invalid input states” after a self-test.
- Fix SPoC dialog not being shown in certain cases
- Shutdown/reboot from DESK is now possible even if the user does not have control and/or a safety error is shown.
- Add feedback in motions in Joint recovery dialogs, especially if movement is stopped before reference positions were reached.
- Add feedback in joint recovery dialogs when movement buttons are just clicked, instead of held-to-run.
- Clarify error message if shutdown fails on login page.
- Fixed misbehaving fine pose adjustment 3D model near joint limits.
- Pilot navigation now works correctly also in task-in-task situations.

- Fixed base errors which could occur sporadically during startup leading to non-recoverable safety error or not booting system.
- Validate that when adding a new user the user name must not contain spaces
- Use meaningful filenames for pdf downloads of user, cobot pump and modbus manuals.
- Show a close button for timeline settings when they are opened.

For app development

- Ride-cli 0.8.0 is now available (see link above) with the following changes:
 - Fixed non-working functions in core model expressions: `int()` and `float()`
 - Improve output when statemachines are started, finished, and stopped with an error message
 - Integrate execution warning ``PendingOperationCalls`` (requires system version $\geq 5.3.1$).

Known issues

- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates.
- When updating from a system image version $\leq 5.1.2$, safety-system update changes CRC of safety configs and requires manual safety-config factory reset.
- Starting with system image version 5.3.0, safety uses not only the arm serial number to identify the system but also regards the article number in order to prevent potential confusion of systems in the future. As this identification is mandatory for all spatial (Cartesian) safety functions, those functions require re-validation.

Version 5.3.0 (2023-03-13)

Important: This update will invalidate certain custom safety rules which contain Cartesian monitoring spaces (SLP-C safety functions and spatial activation conditions). The safety operator can revalidate them in Watchman after the update has been completed. See “known issues” for further information.

Compatibility

ride-cli $\geq 0.5.0$ (latest: <https://download.franka.de/app-development-0.6.2.zip>)

libfranka $\geq 0.10.0$ (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.10.0>)

Functional add-ons

- Nested tasks: It is now possible to drag and drop existing tasks into other tasks. This will call the tasks as subtasks when the parent task is executed. Subtasks are executed with their individually defined parameters.
- Fine pose adjustment: Poses can be adjusted either with respect to the base frame or with respect to the currently stored pose. A 3D visualization of the robot and relevant frames helps with finding the desired adjustment.
- Improved navigation throughout the Franka web UIs.
- Joint position errors can be recovered joint by joint and joints can be moved freely even when they are in error state.

- Renamed “none” safety function to “violated when active” to explain actual effect better.
- User manuals now available in English, German, French, Chinese, Japanese and Korean language.
- Add extended arm serial number (Article serial number + Running serial number) to safety report.

Bugfixes

The most important bugfixes of this system version are:

- Allow self test execution even when overdue.
- General performance improvements for task editing and execution.
- Attempt to persist unsaved changes in DESK upon shutdown or browser-unload event.
- Fixed system not allowing further actions after hold-to-run actions.
- Fixed high handguiding resistance after aborted “move-to” commands.
- Tasks containing gripper apps are now correctly marked as invalid when the endeffector is changed to none.
- Fixed case where system became unreachable in shopfloor network after changing the robot network settings.
- OPC UA: passing an empty string as key value does not crash the service any more.

For app development

- Ride-cli 0.6.2 is now available (see link above) with the following changes:
 - Updated documentation (improved state machine tutorial, ride cli command description)
 - Improved bash tab-completion for bundle names, bundle files and nodes
 - Fix parsing of empty scripts.
 - Fix parsing of int() and float() functions in expressions.
 - Fix port connections in case ports are defined after states.
 - Fix websocket connections being aborted by TLS Error despite valid certificate.
- Race-com 15.4.1 is now available (<https://download.franka.de/racecom-15.4.1.zip>) with the following changes:
 - Updated documentation
 - Support bash/zsh tab completion

Known issues

- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates.
- When updating from a system image version $\leq 5.1.2$, safety-system update changes CRC of safety configs and requires manual safety-config factory reset.
- Starting with system image version 5.3.0, safety uses not only the arm serial number to identify the system but also regards the article number in order to prevent potential confusion of systems in the future. As this identification is mandatory for all spatial (Cartesian) safety functions, those functions require re-validation.

Version 5.2.2 (2022-12-20)

Important: This update will invalidate certain custom safety rules. The safety operator can revalidate them in Watchman after the update has been completed.

Bugfixes

This is a dedicated bugfix release to fix the brake opening routine which exceeded force limits.

Known issues

No new known issues. Known issues from previous versions:

- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates.
- When updating from a system image version $\leq 5.1.2$, safety-system update changes CRC of safety configs and requires manual safety-config factory reset.

Version 5.2.1 (2022-11-14)

Compatibility

ride-cli $\geq 0.5.0$ (latest: <https://download.franka.de/app-development-0.5.3.zip>)

libfranka $\geq 0.10.0$ (latest: <https://github.com/frankaemika/libfranka/releases/tag/0.10.0>)

Functional add-ons

- When downloading system logs, indicate that assembly is in progress.
- Validation status is now also shown for committed safety settings
- Settings UI is not blocked by dialogs (e.g. Single point of control) any more
- System shows a warning if any safety settings become invalid and allows re-validation
- Violation reaction for SLS-C rule in Test&Jog can be customized.

Bugfixes

The most important bugfixes of this system version are:

- Move to pose buttons do not raise errors any more on short clicks or when successfully reaching the pose.
- Watchman now reports if safety settings became invalid (e.g. due to update or robot arm exchange)
- Task errors are also shown properly in Test&Jog
- Increased robot service response times that slowed down executions have been eliminated
- Potentially unexpected motions when avoiding to enter a safety cuboid have been removed
- Robot is now blinking red slowly to indicate task execution errors
- Fixed events that lead to an unusually high friction/resistance of hand-guiding in some situations

For app development

- Ride-cli 0.5.3 is now available (see link above) with the following changes:

- Updated documentation (improved state machine tutorial, ride cli command description)
- Improved bash tab-completion for bundle names, bundle files and nodes

Known issues

- When updating from a system image version $\leq 5.1.2$, a system upgrade requires to sync with Franka World two times due to statemachine updates.
- When updating from a system image version $\leq 5.1.2$, safety-system update changes CRC of safety configs and requires manual safety-config factory reset.

Version 5.2.0 (2022-08-26)

Compatibility

ride-cli $\geq 0.5.0$

libfranka $\geq 0.10.0$

Breaking changes

- Depending on client implementation the add-ons to the OPC UA interface might require changes there (see below).

Functional add-ons

- For FR3 (Franka Research 3) systems it is now possible to use FCI (Franka Control Interface) with the latest libfranka version (see above).
- New features in the OPC UA service
 - Method for shutdown and reboot of the robot
 - BREAKING: Added active task name and id variables to `ExecutionStatus`
 - Method for receiving the currently active task
 - Method for switching to execution mode (Behavioral change: starting task in Programming is no longer possible)

Bugfixes

Contains several bugfixes improving the usability, stability, and reliability of the system.

Dedicated improvements regarding task execution and programming performance are:

- Reduction of overall task execution time increase with the number of installed tasks
- Slight improvement of overall execution time by loading only the actually executed task into memory
- Task list of DESK loads faster on systems with many installed

For app development

- Ride-cli 0.5.2 adds bash completion for all commands and options.

Known issues

- Invalid safety after update:
Due to an update of the system safety existing safety configurations become invalid. This is intended and can be detected by looking at the safety scenario shown in the

sidebar of Franka UI (scenario is “work invalid” when in execution mode). However, there is a known bug in Watchman which prevents showing and resolving this properly there. In order to get the safety back to a valid state it is necessary to make a random change (e.g. add and delete one additional rule in the work scenario) and then revalidate and commit the settings.

Version 5.1.2 (2022-08-05)

Breaking changes

- Due to major changes in core and basic app package, positions in “Cart Motion” and “Joint Motion” app are lost and need to be reteached
- Due to necessary changes of the safety process safety configurations which differ from defaults need to be reset to defaults by the safety operator before applying the update.

Functional add-ons

- Robot self tests can now be triggered via OPC UA
- Sidebar now shows warning when end effector is powered off
- Safety recovery dialogs are no longer shown in Settings to allow creation of a safety operator account for recovery if it is missing.

Bugfixes

Contains several bugfixes regarding usability, stability and reliability.

The most important bugfixes are:

- BFFTRAC-316 “UI can be blocked by committing totally valid safety rules”: Watchman does now allow resetting the safety settings to defaults in all operating modes except “Execution”.
- RACE-4012 “OPC UA login breaks after SSL certificate expiry”: A OPC UA client can from now on still log in even if the certificate is expired
- BFFTRAC-418 “Watchman: Committing more than 1 new safety cuboid results in “Work Invalid””: Safety operator can now commit more than one cuboid etc. in one commit without error.
- BFFTRAC-492 “Unsupported Browser is shown for latest Edge”: Edge browser is now supported.
- BFFTRAC-451 “For recovering joint limit recovery and joint position error the jogging only moves the robot a small distance”: Robot can now be recovered in one continuous motion if the respective hold-to-run button is held.
- BFFTRAC-405 “Error “A guiding enabling device error has been triggered” occurs often”: Significant reduction of occurrence of guiding enabling device error in normal use.
- FIRM-1406 “Shutdown position shall also be stored on high-speed Cat0”: no more “safe position errors” after Cat 0 stops
- BFFTRAC-584 “Position Error Recovery: validate the positions on confirmation”: IMPORTANT: It is now required to actually move the robot to the reference position when recovering from joint position errors.

For app development

- Breaking: This version requires **ride-cli** 0.5.0 for app development and is not compatible with prior versions of ride-cli. (Download ride-cli 0.5.0 at <https://download.franka.de/app-development-0.5.0.zip>)
- Library (common-robot) state machines have been renamed and moved to the Basic App Package
- Please use the library state machines from our bitbucket: <https://extra1.fext.de/bitbucket/projects/BAS>

Version 5.1.1 (2022-05-25)

Added finalized translations for customer manuals (now available in English, German, Chinese).

Version 5.1.0 (2022-05-06)

Release for market launch of FP3.

Version 5.0.0 (2021-12-21)

Release for certification milestones.

Not compatible with previous versions of libfranka.

Major changes compared to 4.x releases

- Franka Emika Robot not supported.
- Apps and tasks of system version 4.x not compatible.
- Support of Franka Production 3 robot.
- Breaking: Robot Service interface changed.
- System provides safety functions according to ISO 10218-1 and IEC 13849:
 - Added WATCHMAN to Franka UI family to configure and validate safety settings.
 - Switching between programming (teaching) and execution is now done via WebUI instead of external activation device.
 - Emergency stop device required to operate robot.
 - New error recovery dialogs allow step by step error recovery.
 - Automatic avoidance of safety constraints by control system.
- Rescue system bootable in case of severe problems with main system.
- OPC UA: Task name format changed compared to system version 4.x.

Version 4.2.2 (2022-08-11)

Changes

- Updated SSL certificate. New certificate is valid until 2023-08-04.

Bug Fixes

- RACE-4012 “OPC UA login breaks after SSL certificate expiry”: A OPC UA client can from now on still log in even if the certificate is expired

Version 4.2.1 (2022-03-02)

Compatible with [libfranka >= 0.9.0](#).

Bug Fixes

- Downloaded logs contain the current user timestamp in the filename and end with ``.felog``.
- Reset/keep dialog was not showing when moving configured app inside group in Desk.
- Reactivated sounds in Desk.

Version 4.2.0 (2021-10-11)

Compatible with [libfranka >= 0.8.0](#).

Functional Add-Ons

- Single Point of Control (SPoC): in order to comply with safety regulations, the system now provides Single-Point-of-Control (SPoC) functionality.
- Initiating Motion (IM): users can now configure a wait time between pressing the play button and actually starting a task to make task startup more safe and expectable for the operator.
- OPC UA Service improvements: see OPC UA documentation for more details on how to connect to PLCs.
- General frontend improvements: improved usability and design of the settings pages.

Bug Fixes

- Increased Performance and Stability: several improvements regarding the editing and execution of large tasks have been implemented to increase system performance and stability.
- It is now possible to set the timeline parameter cartesian compliance to 100%.

Version 4.1.2 (2021-05-25)

Bug Fixes

- Security fixes to prevent attacks from within the local shop floor network.

Important Note: the system has also not been vulnerable in the past if the shop floor network is protected from external attackers. Possible attack vectors include tricking users with access to the shop floor network into visiting a malicious website. With this update, internal attack possibilities from within the local shop floor network are further reduced. Details on the vulnerabilities will be disclosed at a later time to allow all our users to roll out this fixed version onto their robots.

- Stability improvements for long running task executions with intense use of our HTTP based APIs (REST API or OPC UA communication).

Version 4.1.1 (2021-01-26)

Functional Add-Ons

- Added user role “operator” in Desk:
 - User roles “admin” and “operator” can be selected when creating a user;
 - “admin” has all permissions - “operator” has limited permissions.
- Updated Instruction Handbook in English - German version re-added.
- “modbus-service”: added “slave-id” as parameter for “modbus config”.

Bug Fixes

- Fixed crash in “modbus-service” on empty or invalid “config file”.
- Minor Desk UI fixes.

Version 4.0.4 (2021-10-05)

Functional Add-Ons

- Always reset NE_T_EE, a temporary tool transformation, in between task executions.

Version 4.0.3 (2020-07-15)

Bug Fix

- Bug fix on unreleased feature for further validation.

Version 4.0.2 (2020-06-24)

Bug Fixes

- Fixed handling of external enabling and activation devices to avoid false-positives.
- Fixed avoidance “System unusable” errors after emergency stops using the FEBB device.

Version 4.0.1 (2020-05-11)

Compatible with [libfranka >= 0.8.0](#).

Functional Add-Ons

- The robot performs better in various aspects of executing tasks. Our benchmarks showed an improvement in execution time of up to 30% in tasks with many Apps!
- Get the maximum lifetime out of your robot. Instead of time in operation, the system now measures internal values and the actual wear in real-time, maximizing overall lifetime.

- Enable Franka World for Desk: register your robot in Franka World and enable Franka Emika Robot to benefit from all the possibilities the platform brings: access to robot management, possibility to purchase Apps, Features and services, future system updates and so much more.
- Manage everything via one single point of access. You can now register and use Franka World as your command center: administer robots, software licenses, apps, features, orders – you have it all under full control!
- Supervise your entire robot fleet: check which Apps & Features are installed on which robot and deploy Apps, from one robot to another – with just a few clicks in Franka World.
- Enter a digital environment where you feel at home: with major changes of the Desk's side bar, we cleaned your go-to interface, making it more stylish, convenient and intuitive.
- Fine-tune your poses: press the "Move to pose" button in the Pose Adjustment dialog and the robot will move directly to this pose.
- Scale your interaction with Franka Emika's robot to the next level by using the robot as an OPC UA server: via OPC UA you can stop tasks, open & close brakes, get system state, exchange variables, send trigger signals, provide pick poses, wait for sensor trigger, act according to the state of a sensor and read & write values and poses. For this, no "Franka Emika driver" needs to be programmed, just a simple translation to the OPC UA interface.
- Improved Modbus configuration: you can now name each Modbus I/O-pin by simply using the key "pin_names" in the JSON-file, and the naming will conveniently appear in the configuration panels of the Modbus Apps, in Desk. Additionally, by using the key "pin_config" you can also set and name entire configurations of multiple pins and their intended values, to readily and quickly select them, all at once!
- Run FCI on ARM-based platforms, for example on a Raspberry Pi.
- Use the Franka Emika Edition Schmalz Cobot Pump via FCI: you can now use the functionality of the vacuum pump not only with designated Aapps but also via FCI thanks to the 4.0.0 upgrade.

Version 3.2.1 (2020-02-27)

Bug Fix

- Bug fix on FCI issue with downloading of model library.

Version 3.2.0 (2019-09-16)

Functional Add-On

- Added support for FEBB-1.

Version 3.1.0 (2019-06-05)

Compatible with [libfranka >= 0.7.0](#).

Functional Add-Ons

- Add first version of OPC-UA service. Requires the `opcua` feature to be installed.
- FCI: add support for ARM/ARM64 Linux model library.

Bug Fix

- Fix timeout issues with the Schmalz Cobot Pump.

Version 3.0.0 (2019-02-01)

Compatible with [libfranka >= 0.6.0](#).

Functional Add-Ons

- Support new end-effector “Schmalz Cobot Pump”. Requires the `cobot-pump` feature to be installed.
- Mark apps, groups and tasks which are invalid or don't match the current settings.
- Franka Hand can grasp to the outside now.
- Network settings can be changed during first start.
- Change import/export format of tasks. The old format is still supported.
- Add modbus documentation.
- Improve task execution performance.
- Multiple small UI improvements.

Bug Fixes

- Fix reconnection issues when rebooting.
- FCI: fix cancel of active gripper movement with `stop` command.

Version 2.1.4 (2019-03-11)

Compatible with [libfranka >= 0.4.0](#).

Functional Add-Ons

- Overall performance improvements, e.g. handling of complex and long sequences of apps in one task.
- Improved Desk design with ergonomic aspects and enhanced handling functionalities.
- New functionalities can be added via apps and services.
- Better control of the “monitored stop”.

Bug Fixes

- Improved detection and handling of communication errors.
- User interface improvements and bug fixes.
- Fix issues with inverse kinematics.

Version 1.3.2 (2018-06-27)

Functional Add-Ons

- Improved joint and Cartesian impedance controller.
- Improved self collision avoidance algorithm.
- Improved overall stability and bug fixes.

Version 1.2.0 (2018-02-21)

Functional Add-Ons

- Improve performance of task execution.
- Add gpl source code offer document.
- Add modbus diagnostic information to modbus settings.
- Improve context menu widgets.
 - Consistent units between display and editing.
 - Disable pilot interactions when editing text inputs.
- Improve buttons and scrollbars.
- Apps are appended when dropped onto timeline outside of drop zones.

Bug Fixes

- Fix inconsistent motions in guiding after collision.
- Fix user creation and login on older/problematic browsers.
- Fix drag & drop or right clicks and when moving mouse outside of window.
- Fix minor issues with dialog handling.

Version 1.1.2 (2018-02-12)

Functional Add-On

- Improved robot health checks.

Version 1.1.1 (2018-01-29)

Functional Add-Ons

- Added robot un-/folding via Desk and Settings.
- Added self-collision avoidance for end-effector "Hand".
- Updated FCI protocol, requires [libfranka >= 0.2.0](#).
- Display robot firmware version.
- Start modbus service only when it is configured as enabled.
- Improved pilot and base color consistency.
- Improved error messages in user interface.

Bug Fix

- Fixed disappearing context menus on Firefox.

Version 1.0.9 (2017-11-16)

Functional Add-Ons

- Added robot base network settings.
- Added users manual link to the drop-down menu.
- Added live display of modbus values in modbus settings.
- Improved system robustness for long-running tasks.

Bug Fix

- Fixed shutdown without robot connection.

Version 1.0.8 (2017-11-08)

Functional Add-On

- Added more information to logs.

Bug Fix

- Fixed network configuration via user interface and re-enable resolution of robot.franka.de via DNS again.