C – ELROB 2011

Civilian European Land-Robot Trial
6th European Land Robot Trials
3rd Civilian ELROB
20-24 June 2011
Leuven, Belgium

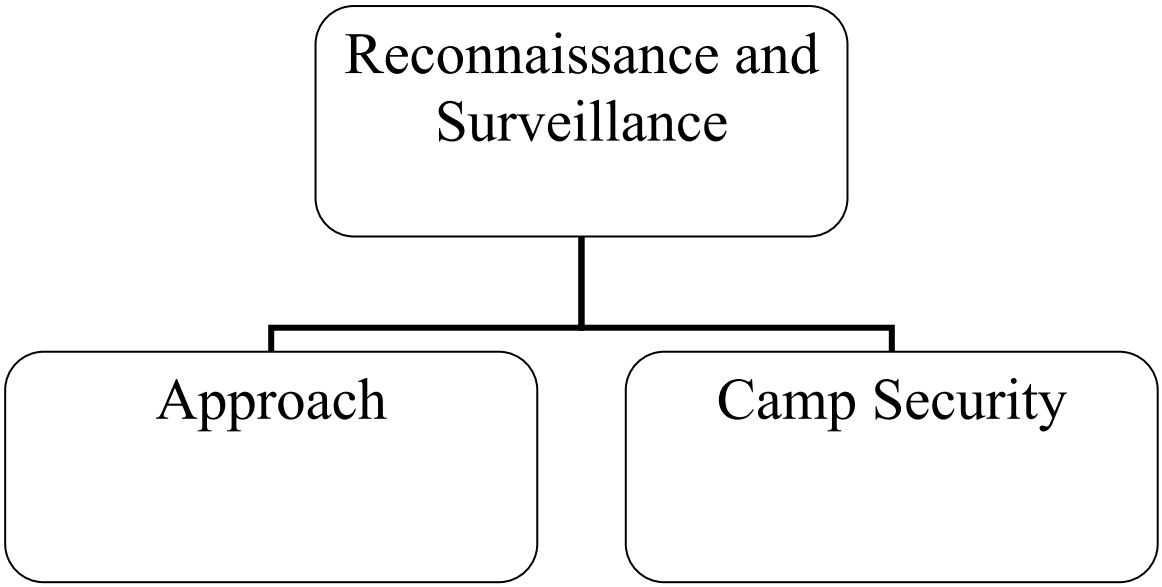
REAL TASKS, IN A REAL WORLD SCENARIO

Reconnaissance and surveillance

Reconnaissance and surveillance is a key task in all operations concerning security domains, fire brigades, civil protection, and disaster control. It can be divided into two scenarios. First the approach of the target area and second the reconnaissance of the target area.

Due to this, the ELROB 2011 reconnaissance and surveillance trial is subdivided into independent tasks/trials. Approach will be done by day and by night!

To give more participants the chance to take part in ELROB 2011, you can choose in which parts of the reconnaissance and surveillance trial you want to participate.



!!! The document is subject to change and refinement!!!

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Reconnaissance and surveillance - Approach

Environment:

Non-urban area, vegetation, grass, sand, water, stones, bushes, roads and paths.

Situation:

A target area located in up to 3000m (meters) distance has to be approached.
There will be dynamic objects and static obstacles on the route.
Dead ends, sharp turns, road blockings and narrow passages can occur.
Traffic presence at the route can be expected.

Objective:

Approach target location with highest autonomy possible.
Perform reconnaissance on the way to and at target location.
Search for particular markers with special characteristics.
If found, acquire imagery and position of marker and report to control station.

Execution/Implementation:

Acquire own position (not known or given).
Approach target location by using given UTM coordinates.
Traverse given waypoints (UTM coordinates) on the way to destination.
This should be done with maximum autonomy available.
If possible, transmit live position and imagery to the control station.

Timing:

Duration approx. 60 min.

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Constraints:

The troop will receive a section of a digital map with UTM grid and UTM co-ordinates that have to be traversed in the given order; see example in the rules.

The scenario ends with reaching

1. the target location and transmission of the acquired data or
2. time limit and transmission of the acquired data

what ever occurs first.

The daylight scenario serves as the qualification for the identical night scenario.

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Reconnaissance and surveillance – Camp Security

Environment:

Semi-urban area, vegetation, grass, sand, water, stones, bushes, roads and paths.

Situation:

A defined area has to be monitored.

There will be dynamic objects and static obstacles in the area.

Objective:

Detect, report, and pursue intruders (intruders are marked with particular markers with special characteristics).

If found, acquire imagery and position of intruder and report to control station.

Execution/Implementation:

Acquire own position (not known or given).

Monitor area with maximum autonomy available.

Search and find intruders.

Continuously acquire the position of the intruders.

If possible, transmit live position and imagery to the control station.

Report information (imagery and position) of intruders to control station.

Online visualisation of unmanned systems and possible intruders in a digital map.

This should be done with maximum autonomy available.

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Additional task:

An authorized person will enter the area.

When intercepted by the surveillance system the person will halt and show their ID.

The ID card has to be photographed and send to control station.

This person will be cooperative.

Timing:

Duration approx. 60 min.

Constraints:

The troop will receive a section of a digital map with UTM grid and UTM co-ordinates that specify a virtual boundary polygon; see example in the rules.

The scenario ends with reaching time limit and transmission of the acquired data.

!!! The document is subject to change and refinement!!!