

ELROB 2026

15 – 19 June 2026
Thun, Switzerland

www.elrob.org

REAL TASKS, IN A REAL WORLD SCENARIO

Reconnoitring of semi-urban structure

Reconnaissance of semi-urban structures and the surrounding environment is an important prerequisite for urban and semi-urban combat operations. At the same time, this is one of the most dangerous tasks soldiers face during a mission. Therefore, having robots for autonomous reconnoitring of buildings definitely means a great relief for the troops.

Environment:

A semi-urban structure, vehicles, low or no light, closed doors, wrecks, sand, water, stones, rubble and debris.

The semi-urban structure that has to be entered is approx. 70m long and 10m wide, it can be partially blocked, dilapidated or even wrecked. There might be smoke present.

Situation:

Reconnoitre the interior of the structure and the present objects of potential interest.

There will be static and dynamic obstacles present. Dead ends, sharp turns, blockings, confined spaces and narrow passages can occur.

Objective:

Search for Objects of Potential Interest (OPI) inside the structure, i.e. particular markers with special characteristics as defined in the rules.

Use highest autonomy possible. Build a photorealistic 2D/3D map of the structure and its interior.

Whenever an OPI is found, acquire imagery and mark its position inside the map representation. Report all gathered data to the control station, online or offline after having returned to the starting point. Plot the robot's path and detected OPI positions into the generated map.

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

Remarks:

- Be prepared to deliver additional data in ROS bag format; exact specification and data types will follow.

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

ELROB 2026

15 – 19 June 2026
Thun, Switzerland

www.elrob.org

Timing:

Duration approx. 45 min. The scenario ends with reaching the time limit and must include the transmission of the acquired data.

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