ELROB 2016

20 - 24 June 2016
Eggendorf, Austria

www.elrob.org

REAL TASKS, IN A REAL WORLD SCENARIO

Reconnoitring of building structure

Reconnaissance of structures and buildings 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:

An urban structure, stairs, low or no light, closed doors, sand, water, stones, rubble and debris.

The urban structure that has to be entered is approx. 50m long and 25m wide, it can be dilapidated or even partially wrecked.

Situation:

Reconnoitre the interior of the building.

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

Objective:

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

Use highest autonomy possible. Build a 2D/3D map of the building.

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.

Additionally: If possible, search and detect a number of hidden radiation sources. Measure the radiation, display the measurement to the operator, acquire imagery and mark its position inside the map representation. Although not a compulsory part of the task, reconnoitring these objects will be rewarded with high bonus points.

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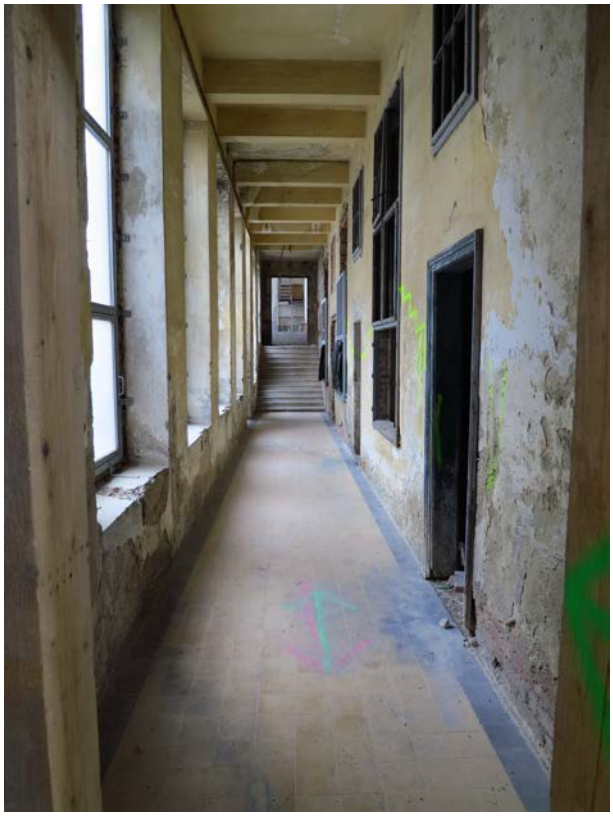
Remarks:

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

Timing:

Duration approx. 30 min. The scenario ends with reaching the time limit and must include the transmission of the acquired data.



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