# ELROB 2020

17 - 21 August 2020

Trier, Germany

www.elrob.org

REAL TASKS, IN A REAL WORLD SCENARIO

## Freestyle scenario

This scenario will give the opportunity to present **military relevant** capabilities that might not be requested in the other scenarios. There is however a slight focus on mobile manipulation. Possible applications are Search & Rescue; MedEvac/CasEvac as well as combat engineering….

Environment:

The environment will be non-urban and include small hills, ditches, flooded ditches, rail tracks, high grass, trees, gravel & mud roads, concrete areas, scrap cars and dummy bodies.

Situation:

This is mainly up to you. The whole scenario story should be easy and straight forward so the audience can grasp the intention without excessive explanations.

For example, you could present a MedEvac/CasEvac application:

> *There are wounded persons lying at two unknown positions in distances of up to 100 m, maybe inside some structure or object. A vehicle has to search and locate the first body, and then transport it to the goal area. Afterwards, the same has to be done for the second body. All this should be conducted with highest possible autonomy.*
>
> *There will be highly dynamic and static obstacles on the route. Dead ends, sharp turns, blockings and narrow passages might occur. Fences, barriers or any kind of blockades and "negative" obstacles, e.g. trenches, can be expected.*

Objective:

The objective should be clearly related to the described situation. The task at hand must be military relevant and concentrate on a primary objective. It should be obvious how the unmanned system is used in a beneficial way.

As an example, have a look at the MedEvac/CasEvac objective from ELROB 2018:

> *Locate and return two dummy soldiers lying at distances of up to 100m. Expect an artificial object of 170cm length and a weight between 10kg and 100kg, depending on the transport capability of the robot (team's choice).*

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

*Additionally, the dummy will have a pull strap or loop for easier transportation. Be prepared to search inside the building structures as well.*

*Find the first imitated body (at the unknown position P1) and move it to the goal area in any way, e.g. by dragging it at the special strap, by pushing it, or by completely lifting it. Place the dummy as near to the goal point as possible. Afterwards, repeat the same procedure with the second dummy (at the unknown position P2).*

*Acquire imagery and exact GPS positions of both bodies. Report gathered data to the control station, online or offline after having returned to the starting point. If possible, also transmit live position and video imagery throughout the mission.*

Timing:

Duration approx. 30 min.

Be prepared to provide a reliable and binding time line for the scenario: