

# ELROB 2024

24 – 28 June 2024  
Trier, Germany

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REAL TASKS, IN A REAL WORLD SCENARIO

## Transport – Convoying

Military transport tasks can be roughly divided into two broad areas, those for dismounted soldiers and those for vehicles, e.g. trucks as a part of convoys.

Movements of personnel, material, humanitarian aid etc. are routine tasks on missions. In hostile environment these movements are dangerous, because convoys always attract attacks like roadside IEDs etc.

### Environment:

Semi-urban, non-urban, wooded, hilly terrain with roads and paths ranging from small streets (covered, e.g., with asphalt, loose chippings or concrete) to simple dirt roads; bushes and trees, grass, sand, water, stones; ditches and trenches.

### Situation:

There is a delivery for a camp within approx. 6 km. A group of at least two vehicles has to be moved to this camp.

There will be dynamic objects and static obstacles in the area. Dead ends, sharp turns, road blockings and narrow passages might occur. Barricades, barriers or any kind of blockades can be expected. Beware of negative obstacles! Dynamic changes of the route are possible! The environment will contain GNSS denied areas!

### Objective:

Move at least two vehicles (each of which must be able to carry a minimum of 1500 kg payload) in a convoy to the target location as fast as possible and with highest autonomy possible. Besides the Safety Drivers should only one vehicle be manned.

There is only one control station at the same time allowed to control the convoy. The control station could be either vehicle-mounted or stationary outside the vehicles.

At least one of the automated vehicles should be remotely controllable from the control station.

The team will receive a map that specify the waypoints which have to be traversed in the given order. The vehicles cannot just drive straight lines between the waypoints but have to identify and navigate along roads and paths.

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

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Actually, the route to the target location is a round course which leads back to the starting point. At least one such lap of 6 km each have to be driven; further laps are possible and desirable. Please note, that the vehicles may not be in a row at the starting point. Since blocked roads are possible, the convoy should be able to dis- and reconnect during operation, and it may be necessary to swap the lead vehicle with the follower vehicle. It is also likely that the convoy must switch to unpaved terrain and that the gap between the vehicles may be more than 150 m (non-line-of-sight).

Deliver the driven path as UTM coordinate list and plot it into the digital map (see rules for format description). If possible, transmit live position and video imagery to the control station.

Report all gathered data to the control station, online or offline after having returned to the starting point.

## *Remarks:*

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

## Timing:

Duration approx. 45 min. The scenario can be finished whenever the vehicles arrive at the target location (i.e. return to the starting point) or ends with reaching the time limit. In either case, the transmission of the acquired data must take place within the time limit.

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