SCHWEIZER ARMEE

Announcement
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Teleoperated UGV-solution for tactical communications deployment

1. Context and background

The Swiss Armed Forces require resilient communication stations to ensure tactical communications over long distances, across difficult terrain or through areas devoid of troops. A typical example is the link between a forward reconnaissance element and a rear command post. There may be several kilometers of terrain between the two without troops of their own present, meaning that a continuous mesh connection cannot be guaranteed and, consequently, the direct communication link is not sufficiently reliable. Military operations and radio planning therefore decide to deploy a dedicated communications station and determine the location to be occupied or a clearly defined target area.

Nowadays, such a forward communications station is usually transported to its designated location by a vehicle and trailer, with a total of four personnel. As a result, the choice of location is largely restricted to roads and tracks that are accessible by vehicle, rather than being based on the optimal location in terms of communications effectiveness. As personnel remain on-site, rotations, supply transport, accommodation facilities, and protective and camouflage measures are required. In this context, current ongoing conflicts reveal an increasingly transparent battlefield. UAVs and networked sensors enable continuous surveillance and reduce the time between detection and engagement. An area devoid of troops is therefore not automatically guaranteed an unobserved or secure area. Particularly in areas with little human activity, individual vehicles, people and recurring movements stand out conspicuously. Setting up a position, personnel rotations and supply runs thus drastically increase the risk that the location will be detected and engaged.

2. Scope of study contract

2.1 Proposed approach

The subject of the study contract is a ground-based, teleoperated UGV solution which transports an existing tactical communications system to a specified operational area, supplies it with power on site for at least 72 hours, and, where necessary, enables its relocation and retrieval. The tenderer shall provide the UGV solution, including mobility, teleoperation, power supply, payload capacity, technical monitoring and a recovery solution. It is important to note that, in the current study contract, the UGV solution is teleoperated and the control station and the UGV are out of sight of one another. Accordingly, autonomous driving and independent route or location selection are not currently basic requirements.

2.2 Use-Case

The UGV is prepared in a secure area and transported to a handover point using a suitable transport solution (e.g. a trailer). Road transport enables rapid deployment and conserves the energy carried on the platform for the actual mission.

The handover point marks the last physical contact with the troops, and the relevant preparation and assembly steps (e.g. antenna installation) are carried out here. From the handover point onwards, the platform is operated unmanned and teleoperated to the specified target area, whilst the operator team remains out of sight in the secure area. The route may take the platform along roads, forest tracks, meadows, gravel tracks and unpaved terrain. The UGV must be capable of leaving main roads and reaching locations that are inaccessible, or only accessible to a limited extent, to a vehicle with a trailer.

Upon reaching the target area, the operator selects a suitable parking space within the specified area and operation is initiated remotely. The platform supplies the communications system with power for at least 72 hours and reports its technical and power status to the control station. For operations lasting longer than 72 hours, it must be possible to replenish power or fuel without interrupting communications operations. Furthermore, if the tactical situation changes, mission planning determines a new target area. The operator directs the platform to the new location, where communications operations continue. Once the mission is complete, the UGV is navigated to the handover point and from there returned to the protected area.

2.3 Not integral part of the study contract

- Development of a new communication system or radio protocol.
- Autonomous radio planning, site selection or navigation in general.
- Integration of additional payload components (weapons, munitions, etc.), provided that this does not preclude such integration at a later stage.