ROBORDER

Autonomous Swarm of Heterogeneous Robots for Border Surveillance

PROJECT COORDINATOR

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Consortium

DESCRIPTION

Border authorities and Law Enforcement Agencies (LEAs) across Europe face important challenges in how they patrol and protect the borders. Their work becomes more problematic considering the heterogeneity of threats, the wideness of the surveyed area, the adverse weather conditions and the wide range of terrains. The vision of ROBORDER is to develop and demonstrate a fully functional autonomous border surveillance system with unmanned mobile robots equipped with multimodal sensors. Our intention is to implement a heterogeneous robot system and enhance it with detection capabilities for early identification of criminal activities at border and coastal areas along with marine pollution events.

OBJECTIVES

ROBORDER addresses the following objectives:
- Autonomous border suriveillance system with unmanned mobile robots.
- Incorporate multimodal sensors as part of an interoperable network.
- Enahanced static networked sensors.
- Early identification of criminal activities.
- Accurate operations in a wide range of operational and environmental settings.

PILOT USE CASES - DEMONSTRATORS

- Unauthorized sea border crossing.
- Unauthorized land border crossing.
- Detecting pollution accidents.

IMPACT

The ROBORDER system is expected to:
- Enhance the protection of human lives exposed at land and sea.
- Improve identification and tracking of illegal acivities.
- Accurately detect marine pollution incidents.
- Support governmental agencies with improving environmental protection.

OUTCOMES

The main results of the deployed system can be summarised as:
- Provision of an overall border security solution.
- Effective operation of a heterogeneous multi-asset system by a single operator.
- Improved payloads and contributions to UxV cybersecurity.
- Photonic radar network and passive radar onboard UAV.