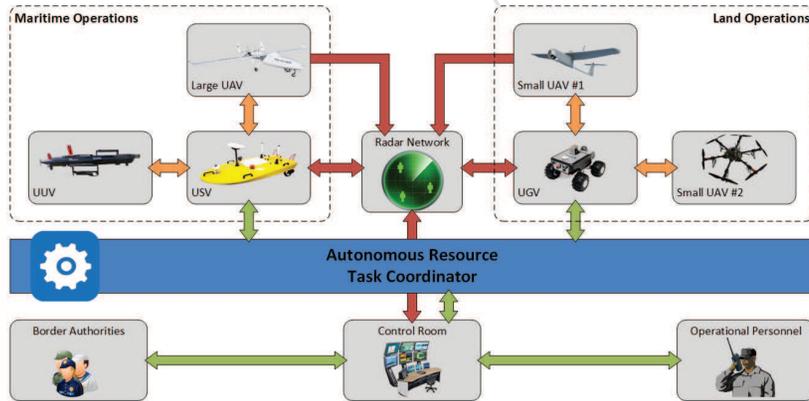


CONTEXT

The overall framework for the **ROBORDER** project lies in the domain of border surveillance, marine pollution detection and situational awareness. The main objective is to detect and recognize illegal border activities, assess conditions and properly indicate and inform the border authorities and operational personnel about the area status.



ROBORDER Architecture

EXPECTED RESULTS

ROBORDER will generate technical outputs with significant impact to the field of border security. Main results of the final deployed system can be summarised as:

- Provide an overall border security solution.
- Enabling response to threats within minutes.
- Effective operation of heterogeneous multi-asset system by a single operator.
- Improved payloads and contributions to UxV cyber-security.
- Photonic radar network.
- Passive radar onboard UAV.
- Improved automatic threat recognition and identification of cyber physical attacks.

DEMONSTRATORS

Unauthorized sea border crossing



The use case involves the monitoring of sea passages and islets in the Greek archipelago. The role of the data mule is assigned to heterogeneous autonomous vehicles equipped with a plethora of sensors like coastal radars, optical cameras etc. The mobile devices interact with static infrastructure enabling the commander to determine whether an alarming situation is developing.

Unauthorized land border crossing



The autonomous systems will allow to patrol hardly accessible territories leading to an optimized surveillance and control situation system with a maximum coverage. The exploited surveillance units will be the source for directing the patrols and tracking illegal activities in order to mitigate personal risks and increase monitoring capabilities.

Detecting pollution accidents



The system will demonstrate the capability to track pollutants spilled at sea and to determine key environmental conditions needed for defining the response and for forecasting the fate of the pollutants. The capability will be tested using a natural phenomenon as a proxy of pollutant spill: a river plume will be tracked by vehicles and environmental conditions measured.

EXPECTED IMPACT

Societal impact describes the improvements that an innovative border surveillance system like **ROBORDER** will bring to the early detection of illegal activities and pollution incidents. Our system is expected to:

- Enhance the protection of human lives exposed at land and sea.
- Improve identification and tracking of illegal activities.
- Influence positively anti-drug and anti-smuggling operations.
- Perform improved Search and Rescue (SAR) operations.