

# promenade

IMPROVED MARITIME AWARENESS BY MEANS OF AI AND BD METHODS

A circular graphic with a grid and the word "promenade" written across it. The grid consists of concentric circles and radial lines, with numbers 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, and 360 around the perimeter. The word "promenade" is written in a white, sans-serif font across the center of the circle. The background of the entire page is a satellite-style image of the Earth's surface, showing the ocean and a coastline with white waves. Overlaid on the ocean are various data visualization elements, including a grid of blue and green dots, a series of yellow arrows pointing in different directions, and a network of blue lines connecting various points.

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## GENERAL INFORMATION

# PROMENADE

### ImPR0ved Maritime awarENess by means of AI and BD mEthods

European waters are navigated daily by some **12,000** vessels, which share their positions to avoid collisions, **generating** a huge number of positional messages every month. It is important that this overabundance of information will not overwhelm the marine operator in charge for decision-making.

PROMENADE **promotes** collaborative exchange of these information between maritime surveillance authorities, **cutting down** the time to market and **guaranteeing compliance** with legal and ethical regulations and norms.

The Use of **Artificial Intelligence** allows the analysis of a large amount of data also by combining it with the use of big data infrastructure to improve border and external security capabilities.

PROMENADE will **foster** new technologies to provide to the **Border Guards Authorities** a Toolkit for automatic vessel detection, tracking and behavioural analysis.

## OBJECTIVES



**Develop** new technologies that will provide Border Guards Authorities with an open service-based Toolkit by implementing innovative algorithms for Artificial Intelligence and Machine Learning applied to maritime surveillance reporting systems, databases and other information sources according to the Big Data perspective.



**Build up** on previous H2020 research projects, taking advantage of their results and enhancing them.



**Facilitate** a fruitful collaboration among adjacent and cross-border agencies operating in the maritime surveillance sphere leading to cost efficient usage of existing resources, including integration with CISE.



**Shorten** the adoption time to innovative technologies by the Border Guards Authorities demonstrating and validating project developments in 3 operational trials and 1 simulated trial.



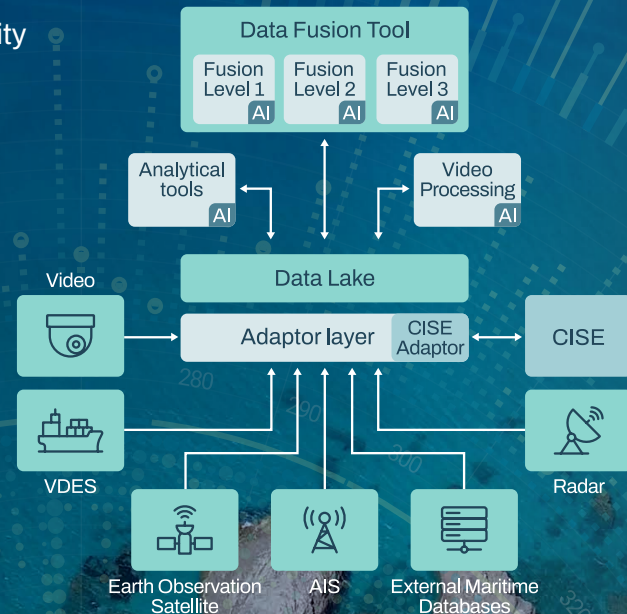
**Ensure** compliance of all the project activities with legal and ethical regulations and norms.

PROMENADE WILL INCREASE THE MATURITY OF PREVIOUS AND ON-GOING RESEARCH ACTIVITIES

# TOOLKIT

PROMENADE Toolkit is distributed across several categories:

- **Classification** applied in the maritime domain, related to vessel detection, classification, route classification, activity classification and oil spill detections.
- **Pattern detection**, through the definition of rule and non-rule-based pattern detection.
- **Risk assessment** that is specialized through the risk detections in vessel behavior.
- **Future state prediction**, related to the prediction of vessel movement.
- **Data Infrastructure** which includes the data lake that allows the storage, processing, and distribution in a Big Data environment, and the CISE Data Exchange, that allows to communicate the data with the external CISE Network.



# TRIALS

The PROMENADE Toolkit will be tested and validated in three **operational trials**:

## IBERIAN TRIAL

SEIZURE OF DRUGS

## HELLENIC TRIAL

DETECTION OF SMUGGLING AND PEOPLE TRAFFICKING

## BALTIC TRIAL

SEIZURE OF EXCISE GOODS

# PARTNERS



Ministry of Maritime  
Affairs and Insular Policy

Special Service of European Union  
Structural Funds of the Hellenic  
Ministry of Maritime Affairs and  
Insular Policy

Project Coordinator, leader of WP1,  
task T1.1 Project coordination  
End-user for the Hellenic trial  
(People smuggling)



French Navy (Marine Nationale)

End-user and contributor to user  
requirements and validation activities



Guardia Civil (Ministry of Interior)

Leader of T2.2: User Requirements  
and Technical Specifications and T6.2  
Iberian Trial. End-user and leader for  
the Iberian Trial (Seizure of drugs)



Marine Traffic

Leader of task T3.5 Future State  
Prediction Services Design and  
T4.4 Risk Assessment Services for  
vessels related entities development.  
Technology contributor: real  
time holistic risk identification  
and assessment.



Lithuania State Border Guard Service

End-user and leader for the Baltic  
Trial (Seizure of excise goods)



Satways

Leader of WP4, and of T2.3:  
Interaction with Existing/Legacy  
Systems and the CISE environment,  
T3.3: Pattern Detection Services  
Design T4.1 Infrastructure  
development. Technology  
contributor: pattern detection and  
abnormal vessel behaviors services.



Innovaworks

Leader of T2.4: Innovative use  
of additional data source, T3.2:  
Classification Services Design  
and T4.3 Pattern development  
Technology contributor: heuristics  
and machine learning mechanisms for  
behavioral analysis



SATCEN European Union  
Satellite Centre

Leader of T2.1 User Community  
Interactions



Leonardo

Technical Coordinator (TC): leader  
of WP5, T5.1 Test architecture,  
Sensor and Data Integration, T5.4  
Factory Integration and Testing  
of Trial Configurations, T7.3 IPR  
Management and Exploitation plan and  
T7.4 Standardization Leader of the  
simulated trial.  
Technology contributor: HPC  
integration platform for the project and  
Maritime Digital Twin model



Kemea Center for Security Studies

Project Manager (PM), Ethics and  
legal Officer (PSO), leader of WP2  
T1.2: Project Management, Quality  
Control and Risk Management.  
T1.4: Research Ethics Management,  
T2.5 Legal Context Analysis, T2.6  
Operational Scenarios & Trials  
Definition, T6.3 Hellenic trial T7.2  
Workshops Coordination Leader  
of operational scenarios and trial  
definition.



Ingenieria de Sistemas para la  
Defensa de España

Leader of WP6 trials planning,  
execution, and assessment and T6.1  
Operational Trials context.



GMV Aerospace and Defence

Innovation and Exploitation  
Coordinator (IEC) leader of: WP3,  
T1.3: Innovation Management, T3.1:  
Overall Design and Architecture,  
T4.2 Classification services  
development, T5.2 Definition of  
System Configurations for Each Trial,  
T6.5 Trials Validation and Evaluation.  
Technology contributor: beacon  
analysis, satellite imagery analysis,  
data fusion, threat assessment.



Baltic Institute of Advanced  
Technology

Leader of task T6.4 Baltic trial.  
Technology contributor: Vessel  
detection in image data.



Transcrime - Università Cattolica  
Sacro Cuore

Leader of task T3.4 Risk Assessment  
Services for vessels' related entities  
design. Technology contributor: risk  
assessment for vessels and vessels  
related entities.



Centre for Maritime Research and  
Experimentation

Leader of task T4.5 Future State  
prediction Service development.  
Technology contributor: Advanced  
prediction of vessel position.  
Evaluator of human-system  
integration.



ReMedia Italia

Dissemination and Communication  
Officer (DCO), leader of WP7  
and T7.1 Dissemination and  
Communication.

# CONTACT

## CONTACT

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