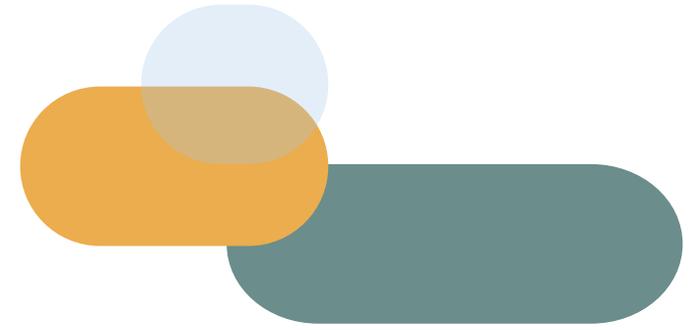


Operationalising EO & AI for Early Warning



**Edoardo
Camilli**

AI4COPSEC

CEO at Hozint, WP5 leader at AI4COPSEC



Security enhancement through heterogeneous data fusion and improved
AI/ML-powered Copernicus maritime and border surveillance services

CENTAUR

2nd Workshop

25 February 2026, Brussels

Edoardo Camilli
CEO at Hozint - Horizon Intelligence
On behalf of project partners



Funded by
the European Union

PROJECT 101190021_AI4COPSEC

Project overview

AI4COPSEC is an innovative Horizon Europe research project focused on enhancing maritime and border surveillance through advanced artificial intelligence technologies.

The project aims to demonstrate the potential of machine learning and GeoAI models to improve existing **Copernicus services**.

AI4COPSEC integrates state-of-the-art AI solutions with Copernicus satellite data to address urgent environmental and security challenges. With a focus on self-supervised deep learning models, geomatics, and social media data, AI4COPSEC seeks to revolutionize maritime surveillance and environmental crisis response through cutting-edge technological innovations.



36 months



10 partners



4 million €

Consortium

AI4COPSEC is coordinated by **Simula Research Laboratory** and **eOdyn** (technical coordinator) and supported by an interdisciplinary consortium of **ten partners** from seven European countries.

Each partner brings specific expertise in the field of maritime surveillance, intelligence and artificial intelligence technologies.

simula

eOdyn

HOZINT
HORIZON INTELLIGENCE

itml
innovation applied

AISTECH
access to intelligent space technologies



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POLITECNICA
DELLE MARCHE

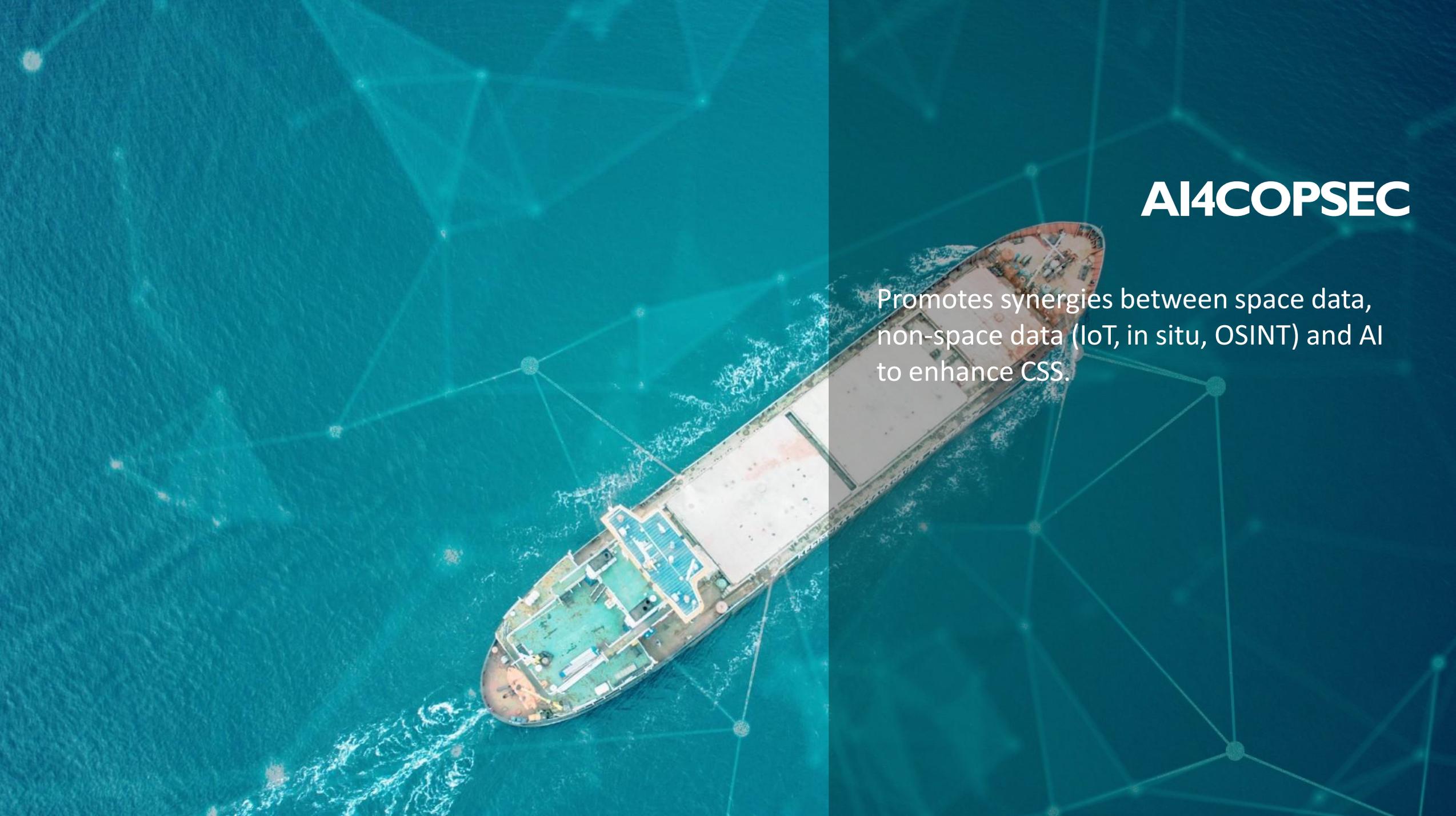
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IMT Atlantique
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AI4COPSEC

Promotes synergies between space data, non-space data (IoT, in situ, OSINT) and AI to enhance CSS.

Use Cases



Search and Rescue

Supporting Search and Rescue (SaR) entities and operations, by developing a rapid alert system, optimised drift modelling, and advanced ship detection/identification.



Oil Spill

Addressing the challenges posed by oil spills at EU level, by developing a rapid alert and response system, optimised oil spill drift modelling, and advanced pollution detection.



Irregular Migration

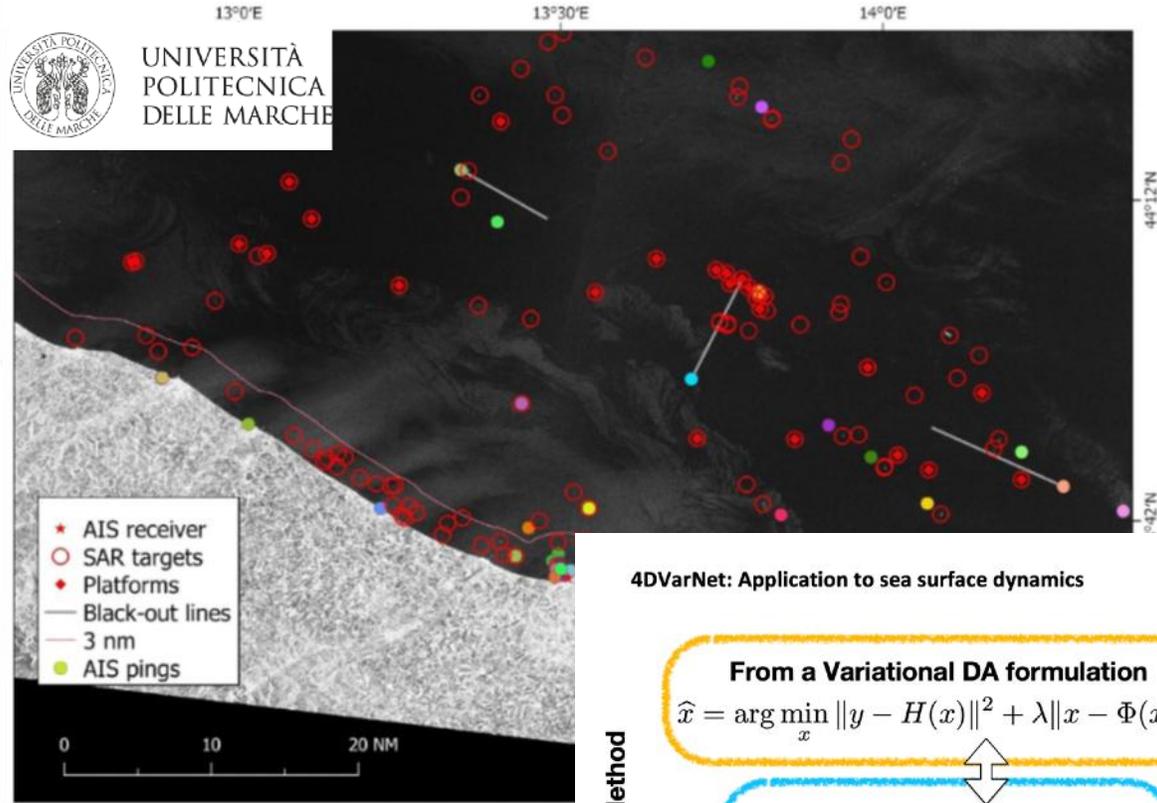
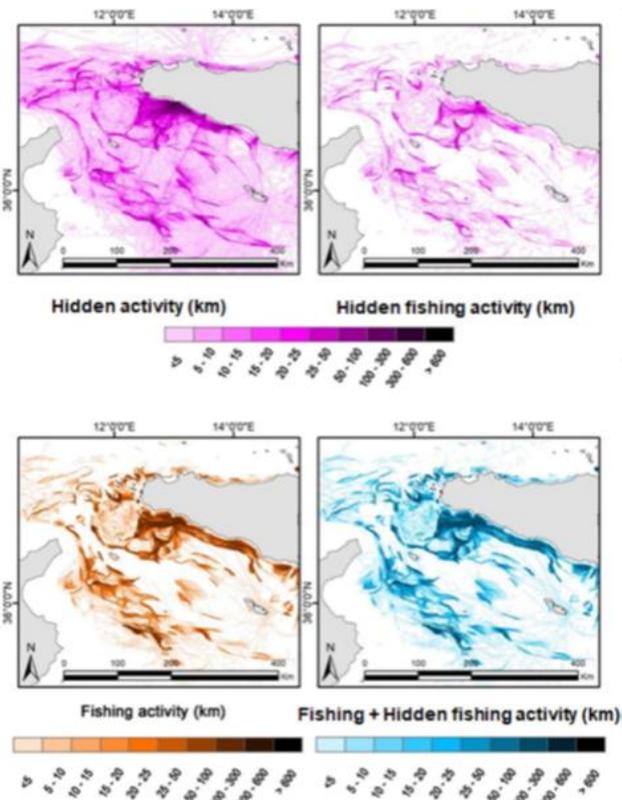
Supporting border and maritime authorities, by developing a rapid alert and detection system for pre-defined suspicious activities at sea, along with accurate predictions of the most likely maritime routes followed by migrants' vessels.



Illegal Fishing

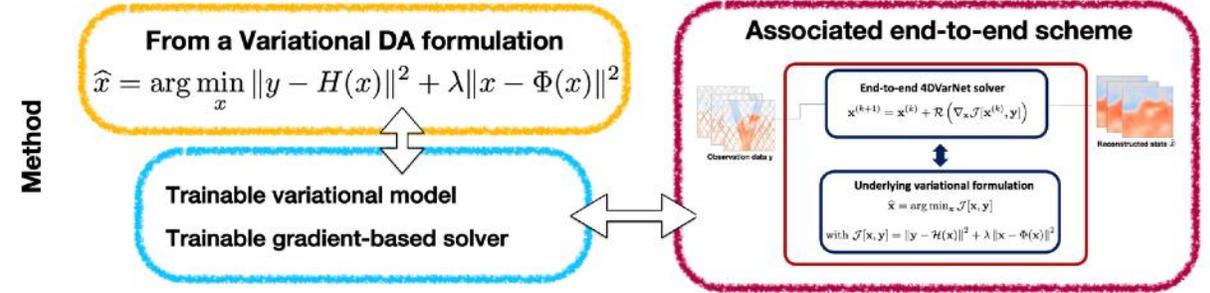
Addressing the challenges posed by Illegal, Unreported, and Unregulated (IUU) fishing at EU level, by developing a rapid detection system for small-scale fishing in restricted zones, advanced AIS shutdown detection, and rapid ship & event alerts

Space data and data fusion

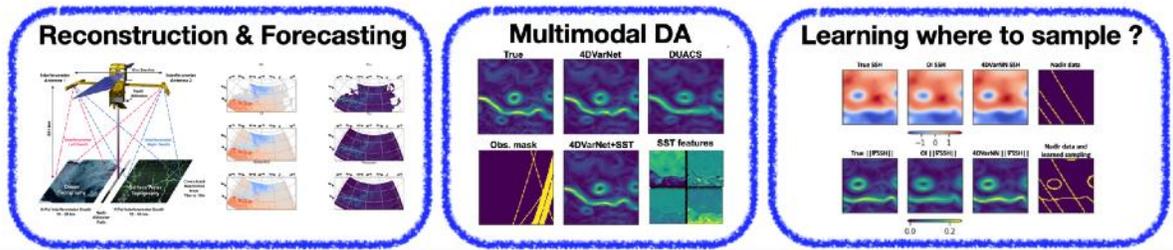


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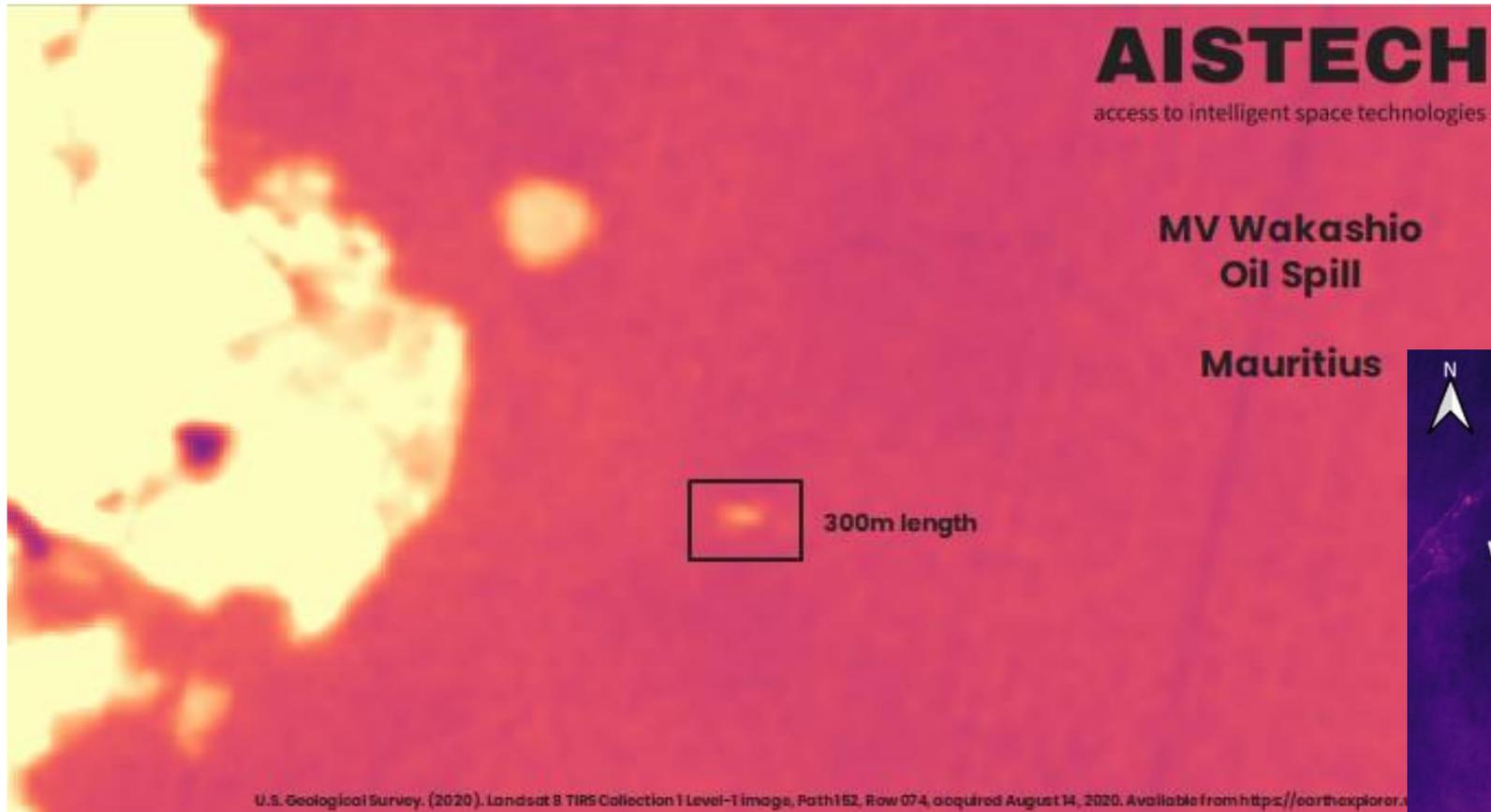
4DVarNet: Application to sea surface dynamics



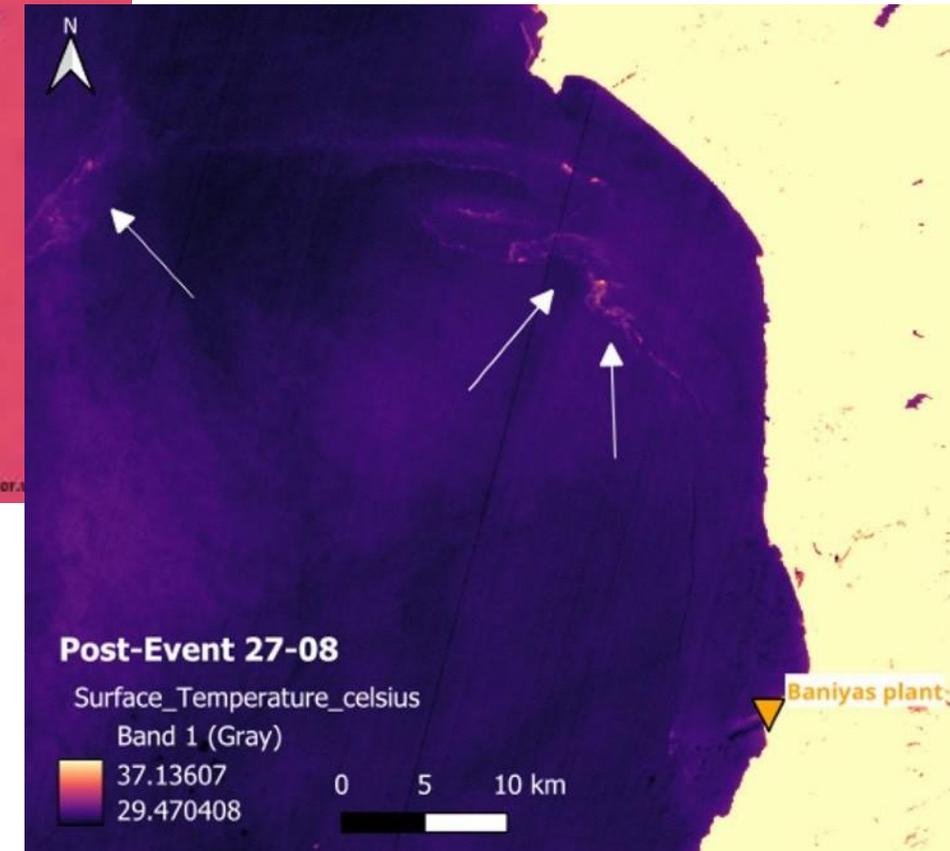
Applications



Space data and contributive missions (Thermal imagery)



Landsat 8 acquisition, courtesy of the U.S. Geological Survey (USGS), Processed by Aistech.



Open source data - Intelligence

The screenshot shows the HOZINT interface with a world map and a list of incidents. The map displays several incident markers with pop-up details:

- INCIDENT** Friday, March 21, 2025 (2 mo): United Kingdom | Jet fuel tanker in flames after crash off England's northeast coast. Categories: CHEMICAL, TRANSPORT & LOGISTICS.
- INCIDENT** Saturday, May 10, 2025 (10 d): Germany | Oil leak from sunken ship in Flensburg - again deployment for fire brigade and THW. Categories: OIL & GAS, WORKPLACE DISASTER.
- INCIDENT** Monday, April 7, 2025 (1 mo): Portugal | Beach closed due to oil spill. Categories: OIL & GAS, WORKPLACE DISASTER.

The left sidebar contains filters for Europe / CIS, Oil & gas, Workplace disaster, and a list of incidents with their respective dates and categories.

The screenshot shows a detailed view of an incident in Ceuta, Spain. The interface includes a satellite map, a list of filters, and a text summary of the incident.

SHARED FOCUSES

FILTERS

- Location: Europe / CIS
- Category: Migration
- Timeframe: Last 90 days
- Keywords: Lookout V2, Incident

Spain | 12 detainees: they passed immigrants from Ceuta to Algeciras on stolen vessels

Published on Thursday 13 March 2025 16:46

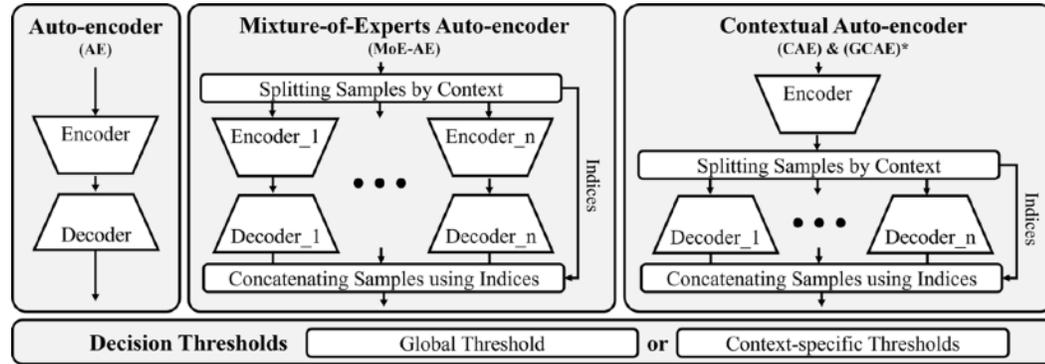
Country: Spain
Location: Calle Sgto. Mena, 8, 51001 Ceuta, Spain
Event Date: Thursday 13, March 2025

Category: MIGRATION
Report: Incident
Impact: LOW

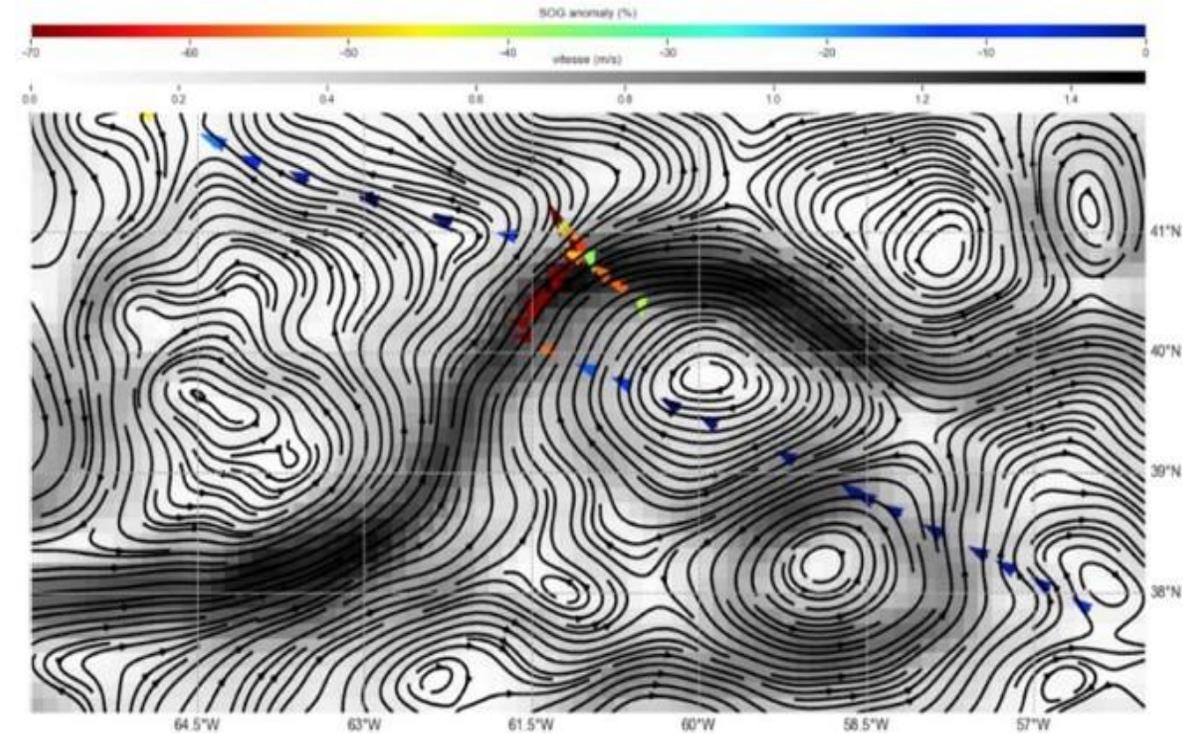
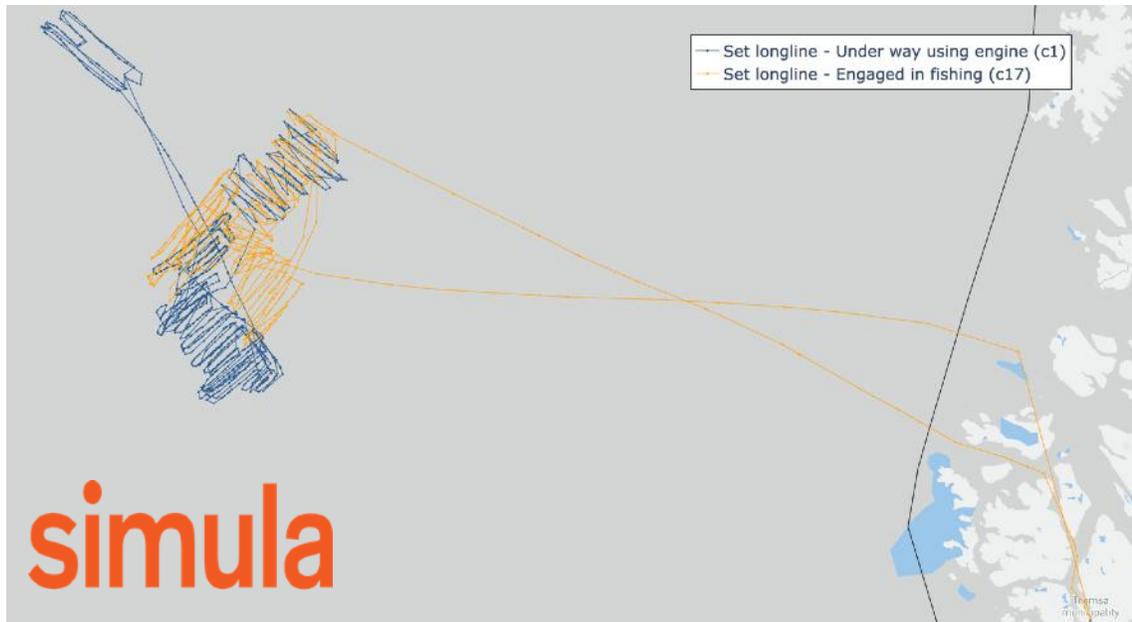
The Central Unit for Illegal Immigration Networks and Documentary Falses (Ucrif) of the Algeciras Local Police (Cádiz) has carried out the detention of a total of 12 persons for their alleged membership in a criminal organization dedicated to the illegal introduction of Moroccan migrants from Ceuta to the coast of [...] La entrada 12 detainees: they passed immigrants from Ceuta to Algeciras on stolen boats aparece primero en El Faro de Ceuta.

Sources
<https://elfarodeceuta.e...>

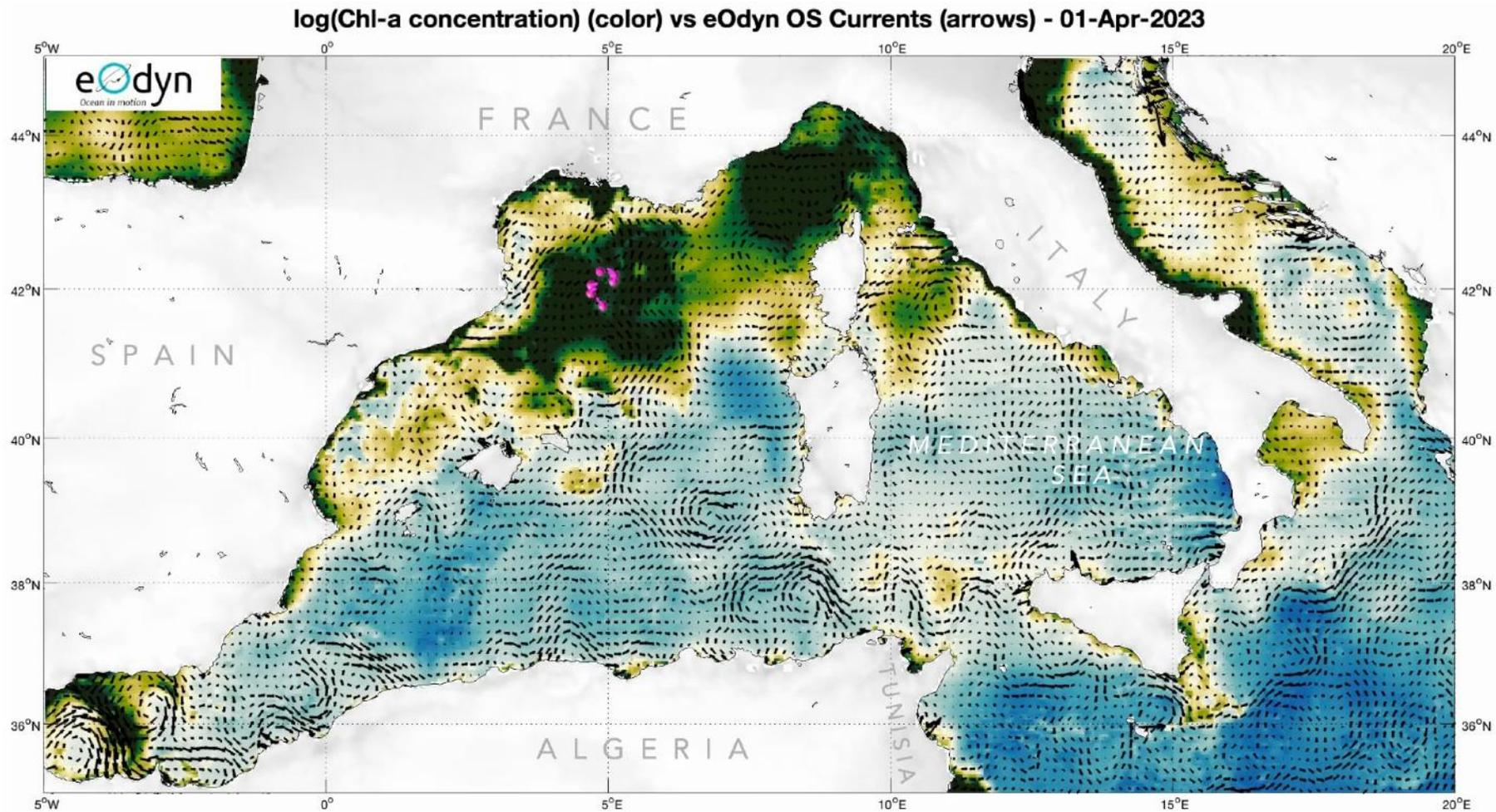
Anomaly detection and context awareness using AI



Context-Aware AutoEncoders (A form of Self-Supervised DL) overcome traditional AE for anomaly detection in maritime traffic surveillance



IoT and in situ data



AI4COPSEC impact...



Environment/Social

Marine pollutions

Illegal fishing

Search and Rescue / migrations



Operations

Enhanced efficiency

Costs savings



...maximized



Guardia
Civil



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Analysis for decision making





Security enhancement through heterogeneous data fusion and improved AI/ML-powered Copernicus maritime and border surveillance services

Thanks!

Do you have any questions?

www.ai4copsec.eu



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