Optimized **R**isk-based **I**ntelligence-driven **O**perations for **N**ext-generation Secure, Reliable and Privacy-preserving Border Management

FASTER, GREENER, AND MORE SECURE
BORDER CHECKS FOR EUROPE

Project Acronym: **ORION**

Programme: **Horizon Europe**

Call: **HORIZON-CL3-2024-BM-01**

Topic: **HORIZON-CL3-2024-BM-01-04**

Type of Action: **Horizon Europe Innovation Action**

Grant Agreement No.: **101225611**

EU Contribution: **€5,240,093.75**

Duration: **36 months**

Start Date: **01/09/2025**
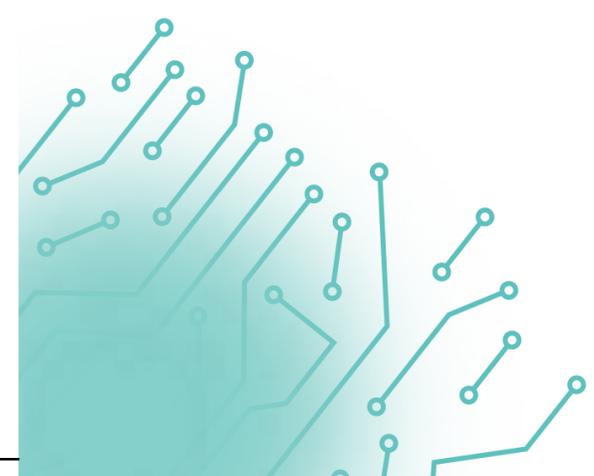
Coordinator: **UBITECH (UBI)**

ORION

ABOUT

ORION develops next-generation technologies to streamline border, customs, and security checks.
It integrates AI, advanced biometrics, and interoperable systems to enhance coordination, improve traveler experience, and ensure strong privacy and legal compliance across EU borders.

AIM

To revolutionize border management through AI-driven risk assessment, dynamic resource allocation, and predictive analytics—delivering faster, smarter, and more secure operations at land, maritime, and rail border crossings.

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OBJECTIVES

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EXPECTED RESULTS

Improve coordination between border, customs, and security controls with novel technologies

Optimise resource allocation to reduce waiting times while ensuring high security

Enhance threat detection in complex environments such as Ro-Ro ferry operations

Ensure interoperability with existing EU databases and legacy systems

Increase energy efficiency and lower environmental impact by minimising queues and congestion

Guarantee strong ethical and legal compliance to protect travellers' data

Faster and more predictable border crossing processes for travellers

Enhanced operational effectiveness in identifying security threats and anomalies

Improved decision-making support for border authorities through data-driven insights

Measurable reductions in congestion, energy consumption, and environmental footprint

Increased trust, transparency, and acceptance of border technologies through explainable and compliant AI

SOLUTIONS

How new technology could speed border crossing and boost security

ORION proposes the development of innovative technologies for seamless and secure identity verification and border management through:

- Remote Biometric Enrolment and In-vehicle Verification
- Morphing Attack Detection and Mitigation
- Device Security for Digital Identity and Travel Documents
- Scalable Vehicle Screening through Portable X-Ray Scanning
- Advanced Vehicle Visual Recognition and Anomaly Detection
- AI-Driven Risk Assessment for Border Management Systems
- Border Resource Allocation and Management Engine
- Intelligent Queue Prediction and Management
- Privacy-preserving Fuzzy Search and Encryption
- Explainable-AI-fuelled Decision Support System

Use Cases

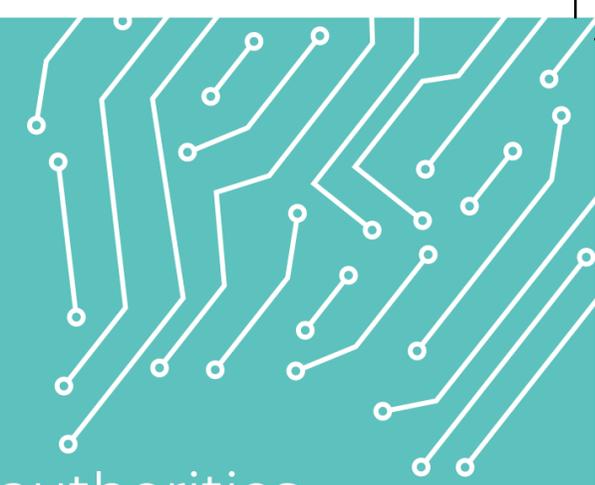Intelligent Management of Embarkation Processes for Ro-Ro Ferries

Optimised Traveller Disembarkation from Ro-Ro Ferries at High-Traffic Ports

Enhanced Risk Assessment and Resource Allocation at Land Border Crossings

Improved Seamless Identity Verification at Train Stations

CONSORTIUM

ORION brings together **21 partners from 14 countries**, including border and security authorities, industry and technology providers, research centres, universities, and transport operators.

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ORION - Horizon Europe Project

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