Press Release

June 2025

Enhancing Border Security and Efficiency at the Port of Galati through FLEXI-cross Innovation

In response to growing challenges at Europe's external borders—ranging from increased migration flows to evolving security threats—the FLEXI-cross project is revolutionizing border management through the deployment of smart, adaptive technologies. At the Port of Galati in Romania, a strategic gateway heavily impacted by the Ukraine conflict, FLEXI-cross introduces a next-generation approach to border control that combines mobile biometric verification, real-time risk assessment, and advanced surveillance tools. This pilot not only enhances operational efficiency but also reinforces compliance with Schengen regulations, offering a replicable model for modern, secure, and human-centric border procedures across the EU.

Existing Operational Process

The current border control procedures at the Port of Galati follow traditional steps to ensure thorough screening of individuals and cargo arriving via sea routes. These steps include:

1. Passport inspection to confirm identity.
2. Visa verification where applicable.
3. Entry and exit stamp checks to monitor movement history.
4. Departure and destination verification to ensure the declared travel purpose aligns with official documentation.
5. Means of subsistence validation for the intended stay, confirming sufficient financial resources.
6. Means of transport and carried objects check, including basic cargo inspection and vehicle verification.

While these procedures provide a structured approach to border security, the rise in complex threats and increased passenger flow demand a more adaptive, technology-enabled solution.

Technology Currently in Use

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To support the border checks, several devices and methods are employed:

1. CREDENCE ONE-MRZ devices are used for travel document scanning, fingerprint verification, and initial identity checks.
2. Foster and Freeman examination equipment is available at second-line checks to assess document authenticity where doubt arises.
3. Visual and physical inspections conducted by border guards serve as the final step in confirming identity and intent.

These tools support thorough checks, but their effectiveness is constrained by limited integration, manual dependencies, and lack of predictive capabilities.

Schengen Regulation Compliance

FLEXI-cross aligns with and enhances compliance with Schengen Borders Code obligations. Specifically, it addresses:

- Article 6(1), which mandates verification of identity, nationality, document authenticity, and the right of third-country nationals to enter the EU.
- Use of SIS (Schengen Information System), Interpol's SLTD database, and national records to detect lost, stolen, or invalid travel documents.
- For visa holders (Art. 6(1)(b)), the regulation requires checks via the Visa Information System (VIS) as per Article 18 of Regulation (EC) No 767/2008.
- In high-traffic scenarios, VIS consultation may occur using visa sticker numbers and fingerprint matching on a random basis, considering internal security and migration risks.

FLEXI-cross strengthens this compliance through automation, risk-based checks, and biometric verification.

Operational Gaps Identified

Several critical capability gaps have been identified:

1. Lack of smart sensors for anomaly detection, threat prediction, and environmental monitoring.
2. Absence of mobile control units integrated with AR tools for efficient real-time identity verification.
3. No face verification mobile app for on-the-move traveler processing.
4. Missing centralized asset and process monitoring platform to connect the various tools and field agents.

These shortcomings hinder responsiveness, efficiency, and coverage across the border control environment.

Technological Re-Design with FLEXI-cross

To address these gaps, FLEXI-cross introduces a redesigned control process:

- Step 1: Upon arrival, mobile identity verification devices are deployed to check faces, documents, and fingerprints instantly against national and international databases.

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- Step 2: If anomalies or alerts are detected, the individual is immediately referred to a second-line control area for a more thorough inspection using advanced tools and cross-database validation.

This streamlined, intelligent process significantly reduces processing times while increasing detection accuracy.

Renewed storyline of the Use Case at the Port of Galati

As the conflict in Ukraine escalated, the Port of Galati became a critical entry point for both humanitarian flows and commercial traffic. The Romanian Border Police faced increased pressures from the dual challenge of supporting vulnerable travelers and preventing cross-border crime.

The FLEXI-cross project was introduced to reinforce the Port's capabilities through innovation. Upon ship arrival:

- Mobile identity devices perform biometric verification on all personnel and passengers.
- If a mismatch or risk flag appears, individuals are directed to second-line checks using advanced scanning equipment.
- Suspicious behavior (e.g., crew member abandoning ship) triggers security protocols, with agents intervening using real-time tracking and biometric confirmation.
- Cargo screening is enhanced through integration with intelligence databases, identifying hazardous or illegal shipments.
- Unauthorized individuals are intercepted using onboard sensors, facial recognition, and smart surveillance—ensuring no hidden zones go unchecked.
- A centralized interface gives agents real-time situational awareness, integrating data from all deployed systems and enabling proactive decision-making.

This pilot case showcases FLEXI-cross as a modern, flexible solution that safeguards borders while facilitating legitimate mobility.

Stakeholder Personas – Pain & Gain

To ensure a truly impactful and user-centered solution, the FLEXI-cross project has taken into account the diverse needs, responsibilities, and challenges faced by all key stakeholders involved in border control operations. Four primary personas have been identified as central to the operational ecosystem: border crossing personnel, second-line border control investigators, travelers, and cargo ship crew members—each playing a critical role in the border control chain.

The table below presents a clear overview of the specific pain points experienced by each persona in the current system, alongside the gains and improvements introduced by the FLEXI-cross solutions to address those challenges.

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PERSONA PHOTO

NAME
Officer cristian Ionescu
AGE
32
GENDER
Male
OCCUPATION
Border security officer
JOB Experience
8 years in border security

Primary responsibility

- Conduct passport, visa, and biometric checks at entry points
- Use mobile identity verification devices (face recognition, document readers, fingerprint scanners)
- Flag suspicious travelers for second-line checks
- Maintain situational awareness of the port using real-time monitoring tools

CHALLENGES AND OBSTACLES

- Long queues and high workload during peak periods
- Limited real-time intelligence on suspicious travelers
- Manual identity verification delays the process

Motivations

- Ensure secure and efficient border control
- Minimize bottlenecks in traveler processing
- Leverage new technology for more accurate risk detection

Technology used

- Mobile control devices with document and fingerprint scanners
- Face verification mobile application
- Access to databases (Interpol, SIS, VIS, national watchlists)

Needs & Opportunities for improvement

- Pre-registration app for faster screening
- AI-based risk assessment system to prioritize suspicious cases
- Augmented reality (AR) smart glasses for hands-free verification

Figure 1: Border crossing personnel Persona

PERSONA PHOTO

NAME
Lieutenant Sorin Vasilescu
AGE
40
GENDER
Male
OCCUPATION
Senior border investigator
JOB Experience
15 years in border intelligence and fraud detection

Primary responsibility

- Conduct in-depth investigations on flagged travelers
- Use advanced biometric and forensic tools to verify identity
- Examine suspicious documents using Foster & Freeman devices
- Collaborate with international security agencies for high-risk cases

CHALLENGES AND OBSTACLES

- Manual document analysis is time-consuming
- Lack of real-time updates on flagged travelers
- Difficulty tracking fraudulent identity patterns

Motivations

- Identify fraudulent travel documents and security threats
- Use cutting-edge tools to enhance investigation accuracy
- Ensure compliance with EU and international border laws

Technology used

- Forensic document examination (Foster & Freeman device)
- Automated biometric analysis for identity verification
- Mobile investigation tools for real-time decision-making

Needs & Opportunities for improvement

- AI-powered fraud detection for faster analysis
- Centralized intelligence-sharing platform for better coordination
- Predictive analytics to identify high-risk individuals

Figure 2: Second line Border control Investigator Persona

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PERSONA PHOTO

NAME
Olga Morozova
AGE
29
GENDER
Female
OCCUPATION
Teacher
Travel frequency
Fleeing war, seeking asylum in the EU

Primary concern

- Safe passage through the border
- Navigating the asylum process
- Providing necessary documentation for legal entry

CHALLENGES AND OBSTACLES

- Lack of knowledge about border procedures
- Language barriers during screening
- Fear of being denied entry or deported

Technology preferences

- Multilingual pre-registration app for fast-tracking asylum seekers
- Mobile biometric identity verification to prove eligibility
- Digital status updates on asylum applications

Figure 3: Taveler Persona

PERSONA PHOTO

NAME
Dmitry Petrov
AGE
52
GENDER
Male
OCCUPATION
Cargo ship captain
Travel frequency
Frequent international travel between ports

Primary concern

- Ensuring smooth clearance for cargo and crew
- Avoiding unnecessary delays at border control
- Ensuring compliance with international shipping regulations

CHALLENGES AND OBSTACLES

- Delays due to manual document verification
- Uncertainty regarding cargo screening procedures
- Complex regulations for international seafarers

Technology preferences

- Pre-clearance system for ship crew and cargo
- Digital identity verification for seafarers
- Automated cargo manifest verification

Figure 4: Cargo ship crew member Persona

The table below presents a clear overview of the specific pain points experienced by each persona in the current system, alongside the gains and improvements introduced by the FLEXI-cross solutions to address those challenges.

Role	Pains	Gains
First-Line Border Control Officer	• Long processing times due to manual passport & visa checks • High workload during peak periods	• Mobile identity verification speeds up processing • Pre-registration app reduces queue times

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	• Limited access to real-time risk alerts	• AI-driven risk assessment prioritizes high-risk cases
Second-Line Border Investigator	• Slow forensic document verification • Lack of real-time intelligence sharing • Manual fraud detection is time-consuming	• Automated biometric verification reduces fraud detection time • Cross-referencing with real-time databases • AI-based fraud detection improves accuracy
Border Security Supervisor	• Delayed response to security incidents • Lack of predictive analytics for threat detection • Difficult to allocate resources efficiently during peak times	• Real-time surveillance & anomaly detection using drones & sensors • Predictive analytics for traffic & threat forecasting • Automated resource allocation based on border flow data
Displaced Person / Refugee	• Uncertainty about border procedures • Language barriers with border officials • Fear of deportation due to document issues	• Multilingual pre-registration app for guidance • AI-assisted document verification ensures compliance • Real-time asylum status tracking improves transparency
Cargo Ship Crew Member	• Long customs clearance process • Unclear cargo inspection requirements • Frequent delays due to manual processing	• Pre-clearance system for ships & crew reduces delays • Automated cargo manifest verification speeds up screening • Digital identity verification ensures fast crew clearance

Policy Innovation Introduced by FLEXI-cross

The FLEXI-cross solution is not just about technology—it drives policy innovation through:

1. Digital Transformation
   - Introduction of mobile biometric devices for on-the-spot identity verification.
   - Centralized risk assessment platforms for coordinated decision-making and intelligence sharing.
2. Automation & AI-Driven Border Security
   - Use of AI-based fraud detection to identify fake passports and visas.
   - Predictive analytics to allocate border staff and anticipate surges in traffic.
3. Pre-Registration & Smart Processing
   - Traveler pre-registration app for quicker, queue-free entry.
   - Automated cargo screening for efficient, faster customs procedures.

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4. Situational Awareness & Surveillance
    - Drones and ground sensors to monitor wide areas for movement or anomalies.
    - Real-time license plate recognition and video feeds to detect unauthorized vehicles or behavior.

Conclusion

The FLEXI-cross project at the Port of Galati exemplifies how a well-integrated technological and policy approach can transform border security. It not only meets current Schengen obligations but also pushes the boundaries of what is possible in managing future mobility and security challenges across Europe's borders.

More information about the project can be obtained from the project website and social media networks.

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