IDEMIA

Innovation for Frictionless and Secure Border Crossings in Europe

The SafeTravellers research program aims to transform border security through innovation

TRAVEL

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Europe's borders are under increasing pressure from sophisticated fraud techniques, identity theft, and evolving security threats. Criminal networks exploit weaknesses in travel documents, facilitating transnational crimes. Meanwhile, border control agencies must balance stringent security measures with the need to ensure smooth and efficient traveler experiences.

To address these challenges, the EU launched the SafeTravellers research program under the **Horizon Europe research and innovation framework**. Running from January 1, 2024, to December 31, 2026, the project **aims to transform border security and identity verification through cutting-edge technologies** while ensuring **privacy** and **seamless travel**. It will operate under strictly controlled ethical and legal testing conditions, with privacy and fairness at the heart of its research focus.

Why the EU established SafeTravellers

Criminal organizations use tactics like **biometric manipulation**, **morphing attacks**, and **document forgery** to bypass border security. These vulnerabilities fuel serious global crimes, including organized crime, human trafficking, and terrorism.

To counter these threats, SafeTravellers introduces advanced solutions **to detect and prevent fraud**. A key objective of the project is to empower travelers with control over their personal data while reducing opportunities for fraudsters to exploit the system. By integrating **multibiometric technologies** with **robust threat detection**, the initiative **strengthens security without compromising privacy**.

With **23 partner organizations** from **14 countries**, SafeTravellers is at the forefront of border security modernization, **setting a new standard for international collaboration in security and identity verification**.

Innovations used in SafeTravellers

SafeTravellers uses a **decentralized approach**, allowing travelers to **store their digital identity** securely in a **mobile wallet** and giving them control over what data they share while complying with existent and upcoming European regulation, such as the **General Data Protection Regulation (GDPR) and the AI Act**. Pre-registration mechanisms further optimize the border clearance process.

The project incorporates many technologies, including:

- **Self-Sovereign Identity management and mobile passport:** Secure storage and sharing of digital identity information.
- **European Multibiometric Data Space:** A unified biometric framework for border checks.
- **Multimodal biometrics fusion:** Combining facial and fingerprint recognition for increased precision.
- **Threat intelligence and unusual event detection:** AI-driven analytics to spot suspicious patterns.
- **XAI-based recommendation engine:** Explainable AI to support decision making at border controls.
- **Identity document fraud:** Identifying forged or manipulated travel documents.
- **Morphing prevention:** Protecting biometric enrollment integrity.
- **Frictionless identification for EU citizens and third country nationals:** Accurate biometric verification for faster border clearance.
- **Defense against look-alike and makeup attacks:** Identifying fraudsters attempting to alter their appearance.
- **Sensor interception and tampering defense:** Strengthening biometric systems against security breaches.

IDEMIA Public Security's role in SafeTravellers

As a leader in identity security, **IDEMIA Public Security** plays **a pivotal role** in SafeTravellers by providing **biometric authentication** and **document verification solutions**. The company's contributions focus on bolstering fraud detection and integrating new technologies into border security systems.

In **France**, IDEMIA Public Security's research team is **refining document authentication methods** that classify travel documents based on their model and country of issuance. One of the main challenges is ensuring **high-quality image capture**—reflections from light sources can obscure critical information and security features when travelers scan documents using smart devices. IDEMIA Public Security is developing new techniques to reduce glare and boost Optical Character Recognition accuracy.

In **Germany**, IDEMIA Public Security is leading **research into spotting look-alike fraud** and **makeup attacks**, where individuals alter their appearance to evade identity verification. By leveraging **AI-powered facial recognition**, the team is analyzing facial similarities and anomalies to expose fraudulent attempts. This helps border control agents to accurately differentiate between legitimate travelers and impostors.

IDEMIA Public Security is collaborating with SafeTravellers partners **to develop an integrated software platform that combines pre-registration**, **document verification**, and **biometric authentication**. This solution will be available as a smartphone app for travelers and border control agents, as well as through static versions for eGates and border kiosks. A prototype is already in development, with **a pilot phase planned to bring the technology closer to real-world implementation**.

The future of secure and seamless travel

SafeTravellers represents **a major step forward in modernizing European border security**. It provides tools to **detect fraud**, **improve operational efficiency**, and **reinforce national security for border control agencies**. By combining technology with privacy-first principles, the project ensures that **security measures** are both **robust** and **fully compliant with EU regulations**.

For passengers, SafeTravellers brings **reduced wait times**, **greater security**, and **a frictionless experience** when crossing borders. As the project moves toward practical implementation, IDEMIA Public Security remains committed to

delivering **ground-breaking solutions that redefine the future of border management**.

To learn more about this initiative and its latest developments, visit SafeTravellers Project