

04.06.2025

PopEye Project

Biometrics on the move



PUBLIC

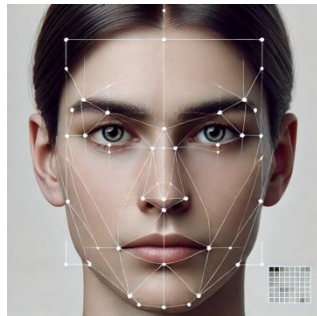




What do we do in PopEye?

- Developing **biometrics** on the move
- For what use?
 - Border crossing scenarios (on a gate way area)
 - At external EU borders

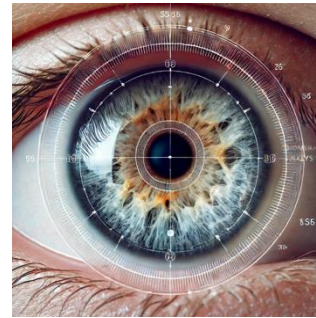
AI generated images for illustrative purposes



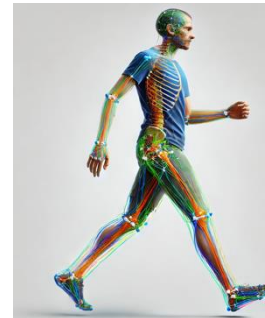
Face 2D/3D



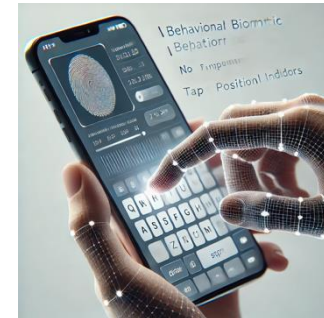
Fingerprint



Iris



Gait



Behaviour



Why biometrics on the move?

- Increased need for Identification/Verification at EU external borders
 - Significant pain point for both travellers and Border Authorities
 - Concerns about the introduction of Entry/Exit System – increased waiting times
 - Increased costs, reduced competitiveness, disruption of supply chains...
- Biometrics on the move
 - Can reduce the waiting time at borders through automating identification
 - Need for more advanced and robust biometric technologies
- For whom
 - Law Enforcement, Border Control & Travellers

Who we are

7 Academics



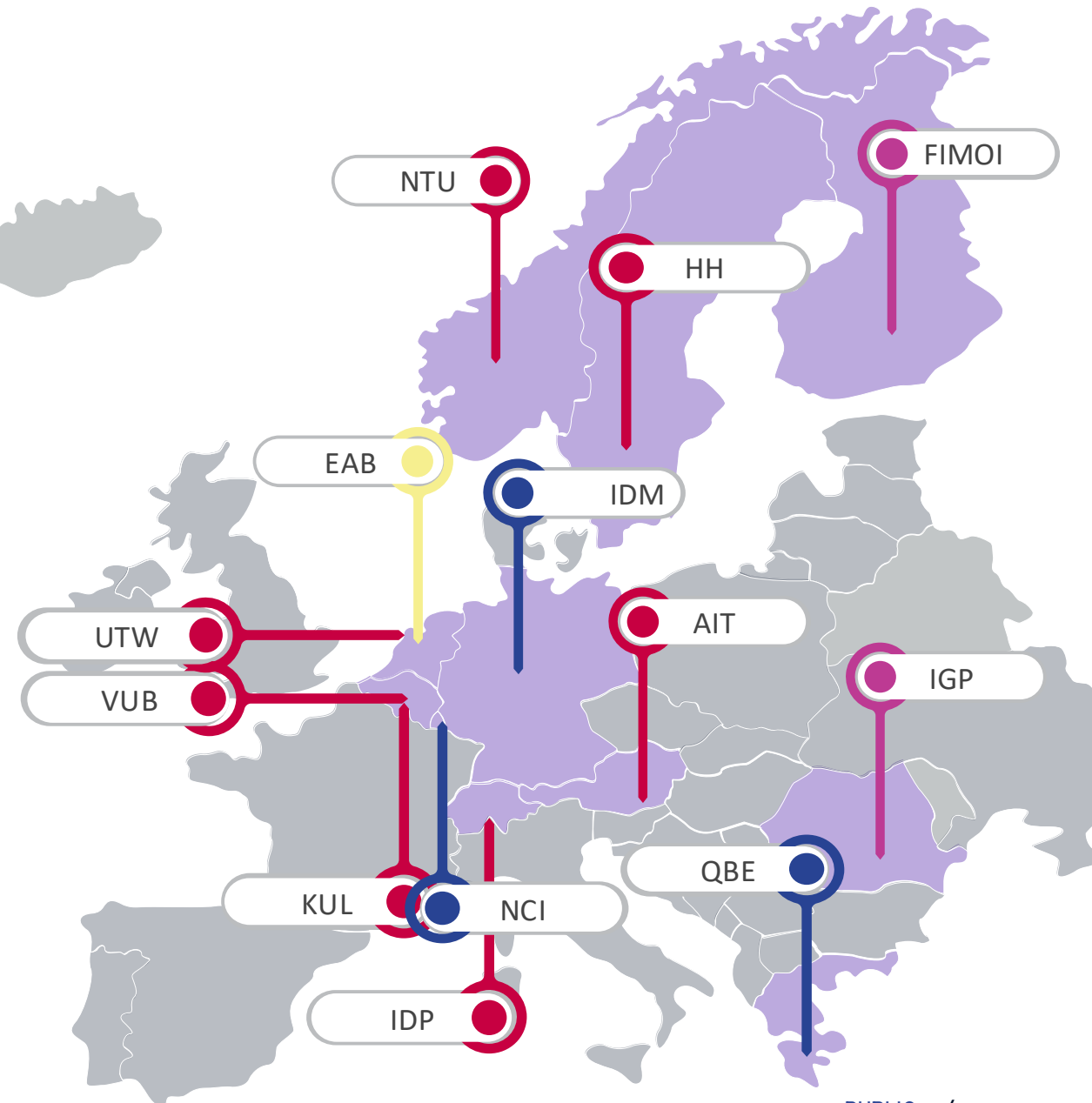
3 Industrials

2 Gov Agencies

1 Association



Ministry of the Interior
Finland





PopEye scenarios



(1) Crossing **with vehicle** land & sea border



(2) Crossing **by foot** land & sea border



Planned Pilots



Pilot 1



- Finland
- Land border
- Focus on passing vehicles
- Expected date: Q3 2026 – Q1 2024

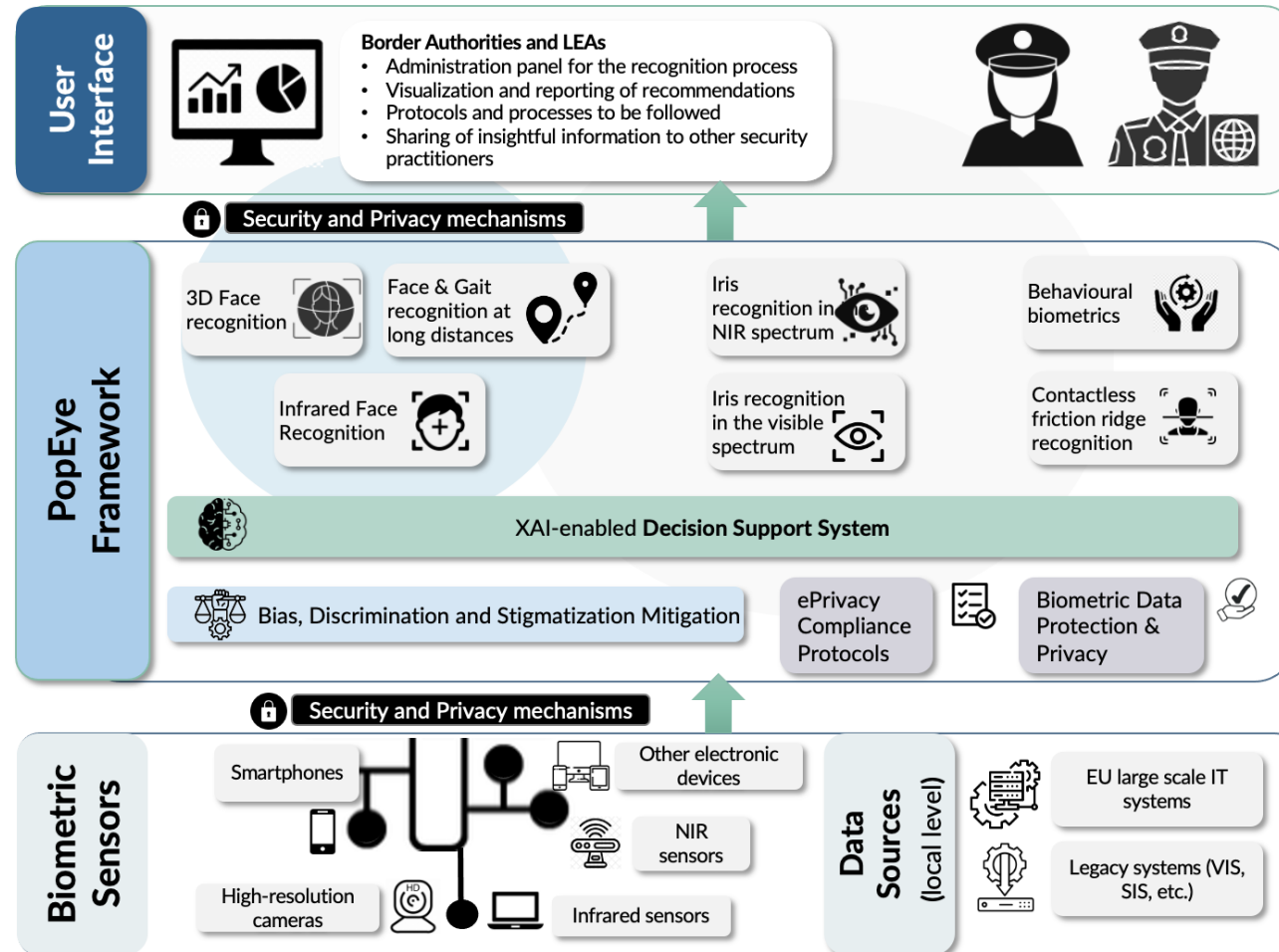
Pilot 2



- Romania
- Sea border / Ferry
- Focus on travellers by foot and vehicles
- Expected date: Q3 2026 – Q1 2024

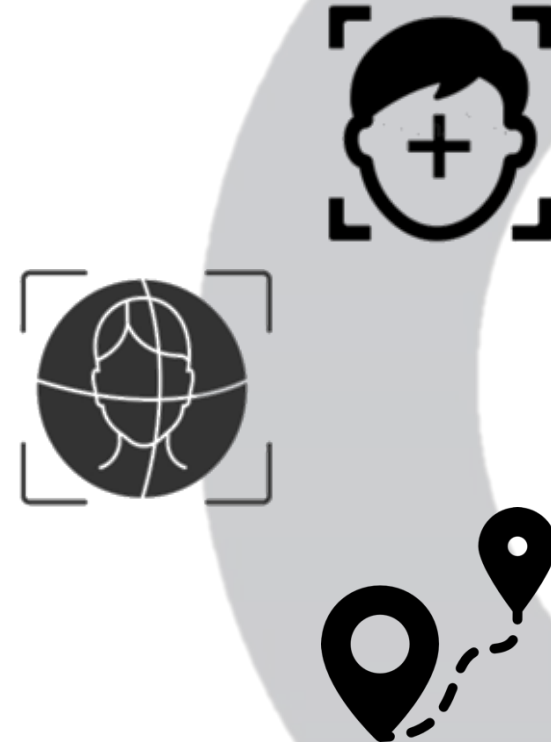


What will be improved?



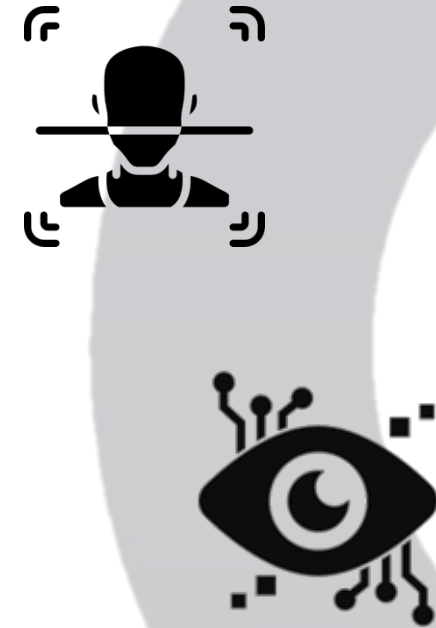
What will PopEye investigate?

- **Infrared Face** Recognition at different natures
 - Multispectral infrared
 - Within vehicles
- **3D Face** Recognition
 - Robustness occlusion, lightning conditions and different distances
- Face and Gait Recognition at **Long Distance**
 - Up to 200m
 - Dealing with low resolution, variable lighting condition, occlusion and motion blur



What will PopEye investigate?

- Contactless **friction ridge** recognition Recognition at different natures
 - Fingerprint, palmprint, and finger-knuckle-print
 - Operating at a range of about 1 – 2 meters
 - Facilitate non-stop identification during movement
- **Iris recognition** in NIR and visible spectrum
 - Improve recognition - less dependent on gaze direction
 - Import representation of iris codes



What will PopEye investigate?

- **Behavioural Biometrics**
 - Verification on-the-move
 - Based on smartphone
 - Speed and gesture patterns
- **XAI Enabled Decision Support System**
 - Recommendations to border authorities for selecting the most suitable biometric technologies in diverse and challenging environmental conditions



Legal, Ethics and Social Impact

Dedicated legal/ethics partners

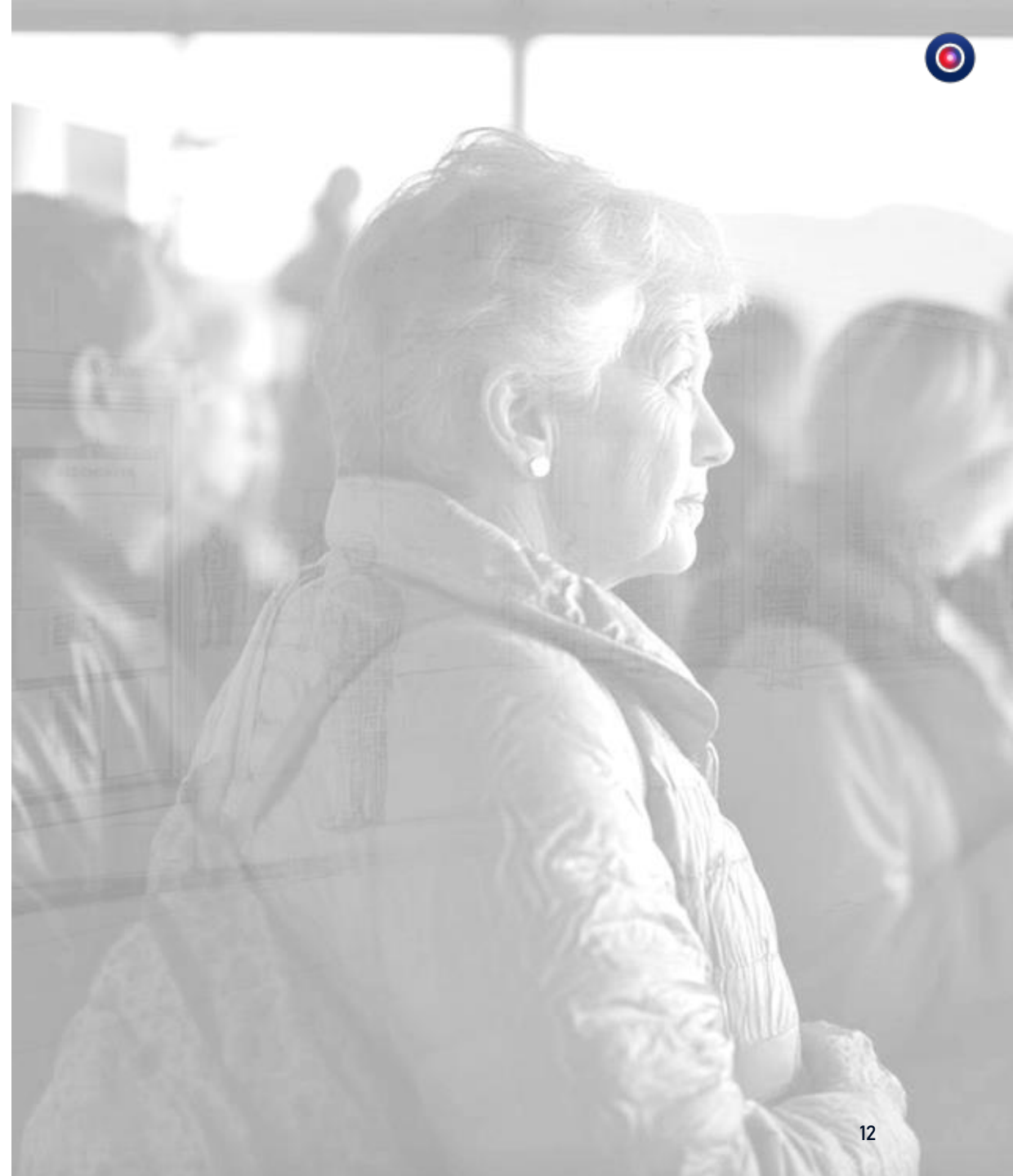
- KU Leuven & VU Brussels

Dedicated task

- Analysis of PopEye's legal, ethical and social impacts
- Ensure compliance – AI Act, GDPR

External Independent Ethics Board

- Three experts
- Reports at Month 9 (June 2025), 19 (March 2026) & 36 (September 2027)





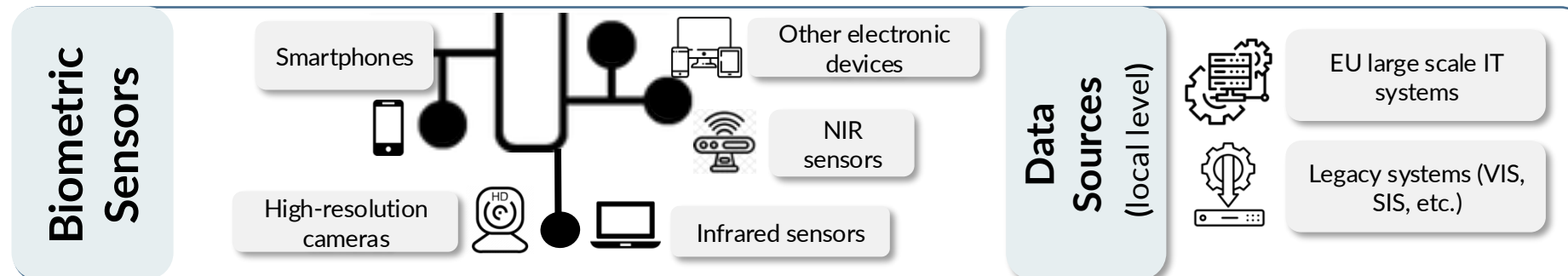
Connection to existing EU systems

Wide variety of systems provided by eu-LISA

- The system of most interest: Entry/Exit System

Open Questions

- How to integrate developed Technology into EES?
- Is it possible to get details specifications?
- Who is the best contact point?





Thank you very much!



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Ministry of the Interior
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