



**Intelligent Portable
Control System**

Project Presentation



About iBorderCtrl

Project Grant Agreement No. 700626

Budget: 4.5 M Euro

Grant: 4.5 M Euro

Start: 1 Sep 2016 (M1)

End: 31 Aug 2019 (M36)

13 Partners, 9 Countries



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 700626.

iBorderCtrl Consortium

Coordination (+Tech Provider)

- European Dynamics Luxembourg SA., LUX

Tech Providers

- Institute of Communications and Computer Systems of NTUA, EL
- Stremble Ventures Ltd, CY
- Manchester Metropolitan University, UK
- iTTi, POL
- Everis Aerospace and Defence, ESP
- Biosec Group, HU
- JAS Technologies, POL

Pilot Users

- Hungarian National Police, HU
- KEMEA, EL
- TRAINOSE, EL
- State Border Guard of the Republic of Latvia, LAT

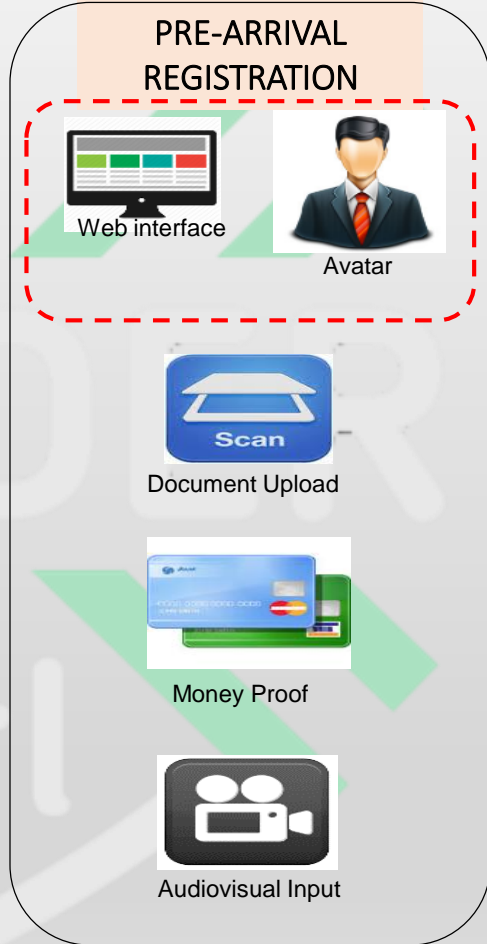
Ethical, Legal

- Leibniz University Hannover, DE

The Project - Core Objective

- **Significantly increase the efficiency and security** in terms of traveller throughput and fewer illegal crossings respectively;
- **Reduced time at the border** by utilising the portable traveller devices and portable units;
- **Utilise a pre-registration step** to better inform travellers of their rights, the travel procedures, data collected and analysed as per EU and national legal requirements;
- **Reduce the subjective control** and workload of human agents
- **Increase the objective control** with automated means that are non-invasive and do not add to the time the traveller has to spend at the border;
- **Create a fifth tier** for the four-tier access control model of the Integrated Border Management System involving bona fide travellers and regular travellers into a Schengen-wide frequent traveller programme.

Pre-arrival Registration



➤ Securely accessible web interface

- provided for travellers to register
- guide them to provide the required information for the pre-arrival control

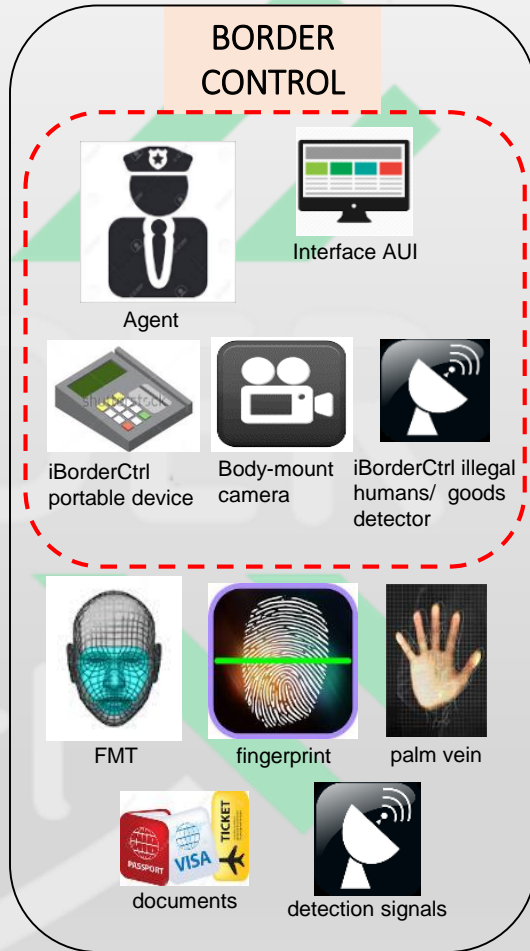
➤ Mobile Application

- reflect the interaction of the travellers and the border agent
- will enable the travellers to rapidly recall information already uploaded to the system
- will acknowledge them with the next steps or any parallel information needed before, through and after the border check procedure.
- is referring to all travellers, from different countries, different ages and cultures

➤ Avatar

- a short, automated, non-invasive interview, subject to lie detection
- Improve performance in comparison to human agents, as it correctly adapts to travellers profile

Border Control



- **Portable hardware iBorderCtrl unit:**
 - **dedicated portable travel document scanners** → to capture the travel documents (e-tickets, passports, ID cards, etc.)
 - **biometric scanners** → capture state-of-the-art biometrics such as fingerprints, faces, veins, etc.
 - **body mounted cameras** → capture and process non-verbal features required for lie detection at the crossing point
- **Human border control portable Agent User Interface (AUI)**
 - visualises (real time) the quantified metrics resulted from the sub-system analytics
 - guides the processing required
 - allows the agent to correlate the result with his own perception of the traveller

Key Components of iBorderCtrl Technological Framework



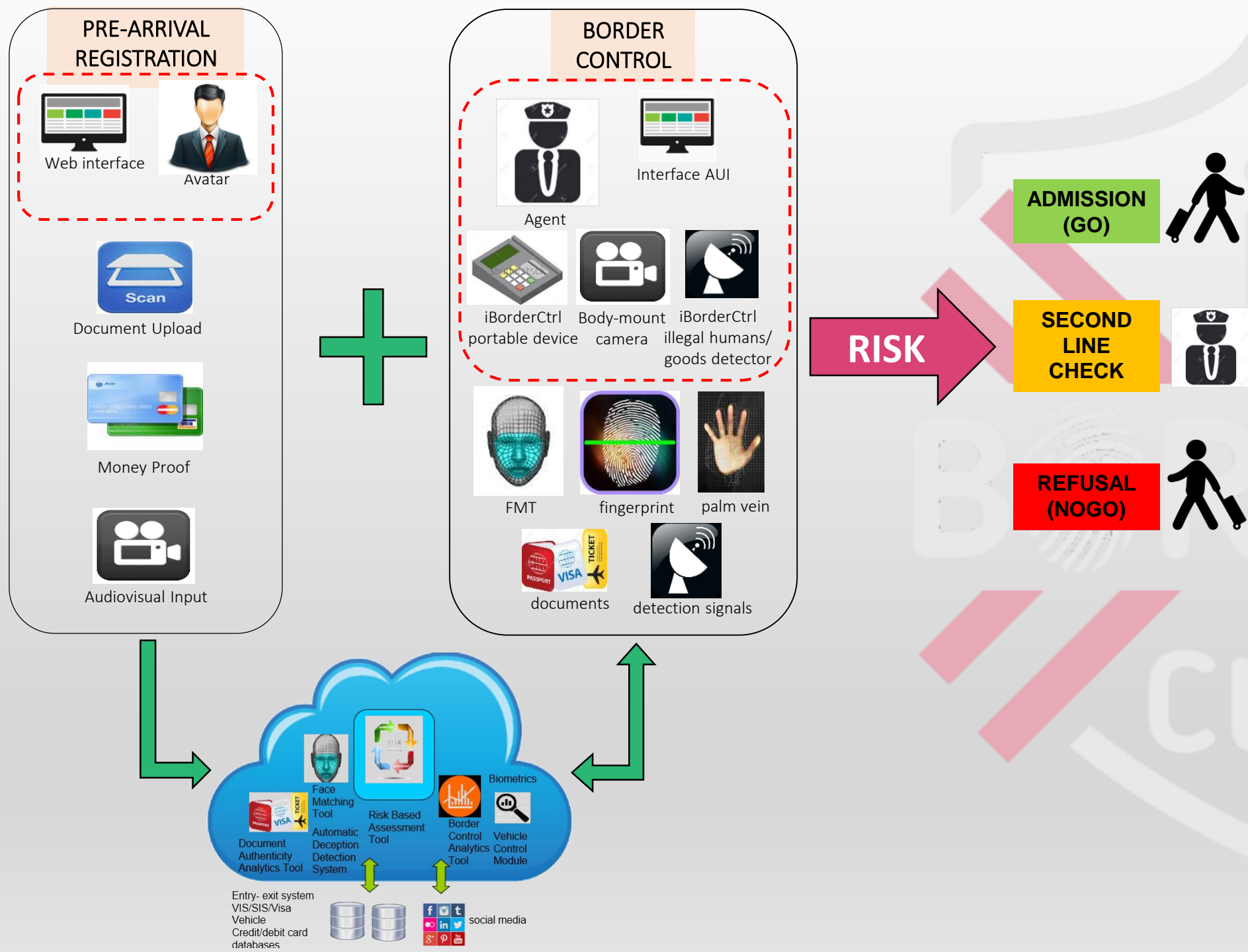
- **Hidden Human Detection Technology (HHD tool)**
 - detection of people crossing land borders hidden inside vehicles or trucks and trains containers or open cargo wagons.
 - CW radar and acoustic life detector
- **Automatic Deception Detection System (ADDs)**
 - analyse Non-Verbal Behaviour provide an estimated level of deception based on analysis of the video-recorded question-answer session
 - Questions will be unpredictable by the traveller and will target issues based on the traveller's data and profile analyses
- **Document Authenticity Analytics Tool (DAAT)**
 - straightforward verification of travel documents
- **Biometric Analytics (BIO)**
 - process the biometrics captured by the related devices of the portable hardware unit
- **Face Matching Tool (FMT)**
 - captures the face of the traveller at each stage → correlates it with data in the travelling documents

Key Components of iBorderCtrl Technological Framework



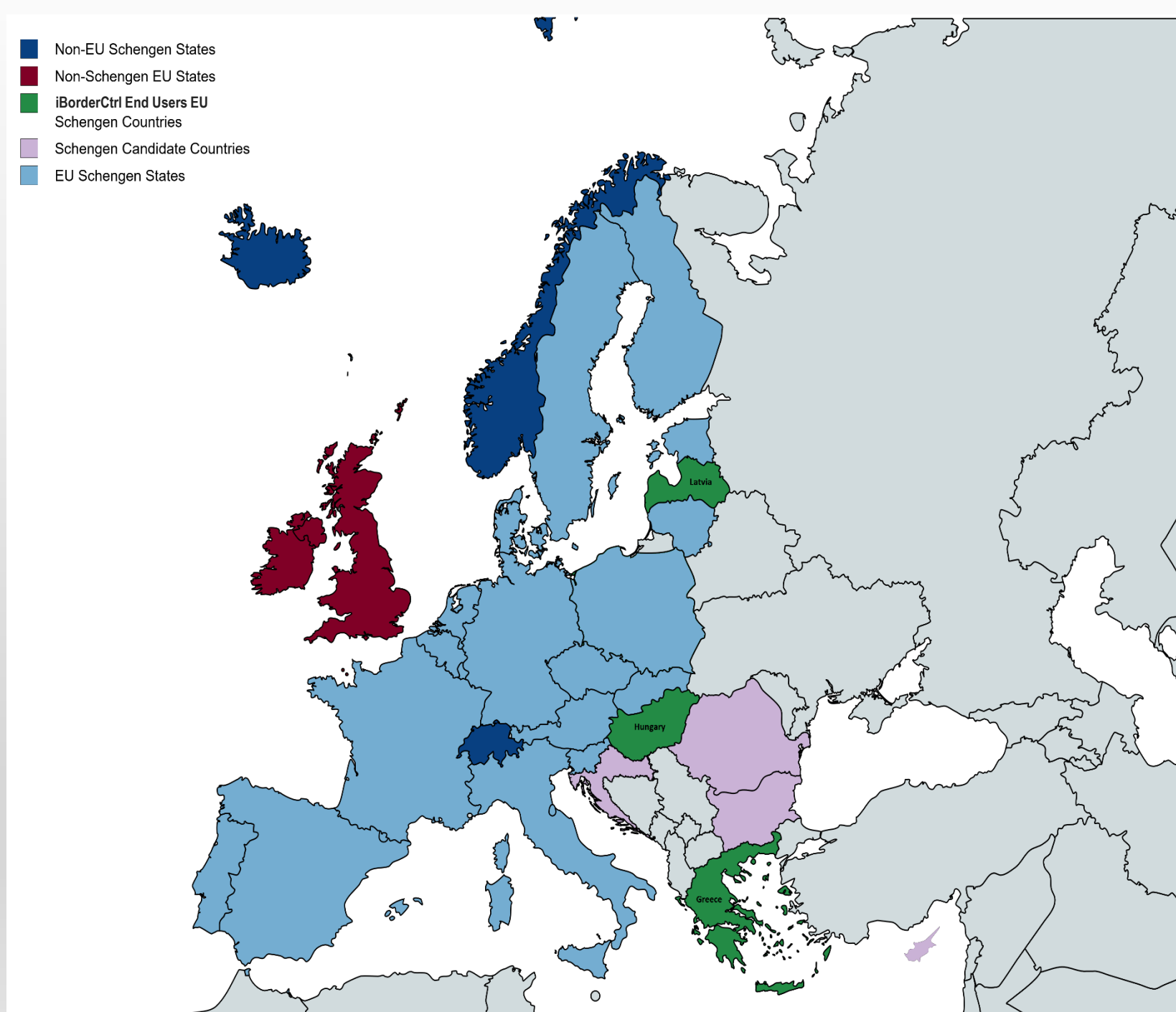
- **Vehicle Control Module (VEHC)**
 - controls and process the vehicle registration against cloning, alteration, theft and unauthorized use
- **Integrated automated border control Risk-Based Analytics Tool (RBAT)**
 - utilizes risk based approaches to intelligently fuse all data collected and risk estimated
 - classify travellers to facilitate the human agent task.
- **Intelligent Border Control Analytics Tool (BCAT)**
 - evaluates the performance of iBorderCtrl systems
 - discovers key patterns in the data that would help quickly identify False accept/rejects of travellers
 - based on advanced algorithms (machine learning, neural networks, statistical approaches)
- **Wireless connectivity with ensured QoS through radio network (wireless mobile and satellite techniques)**
- **Cloud-based dealing with all privacy/security issues**

iBorderCtrl Concept

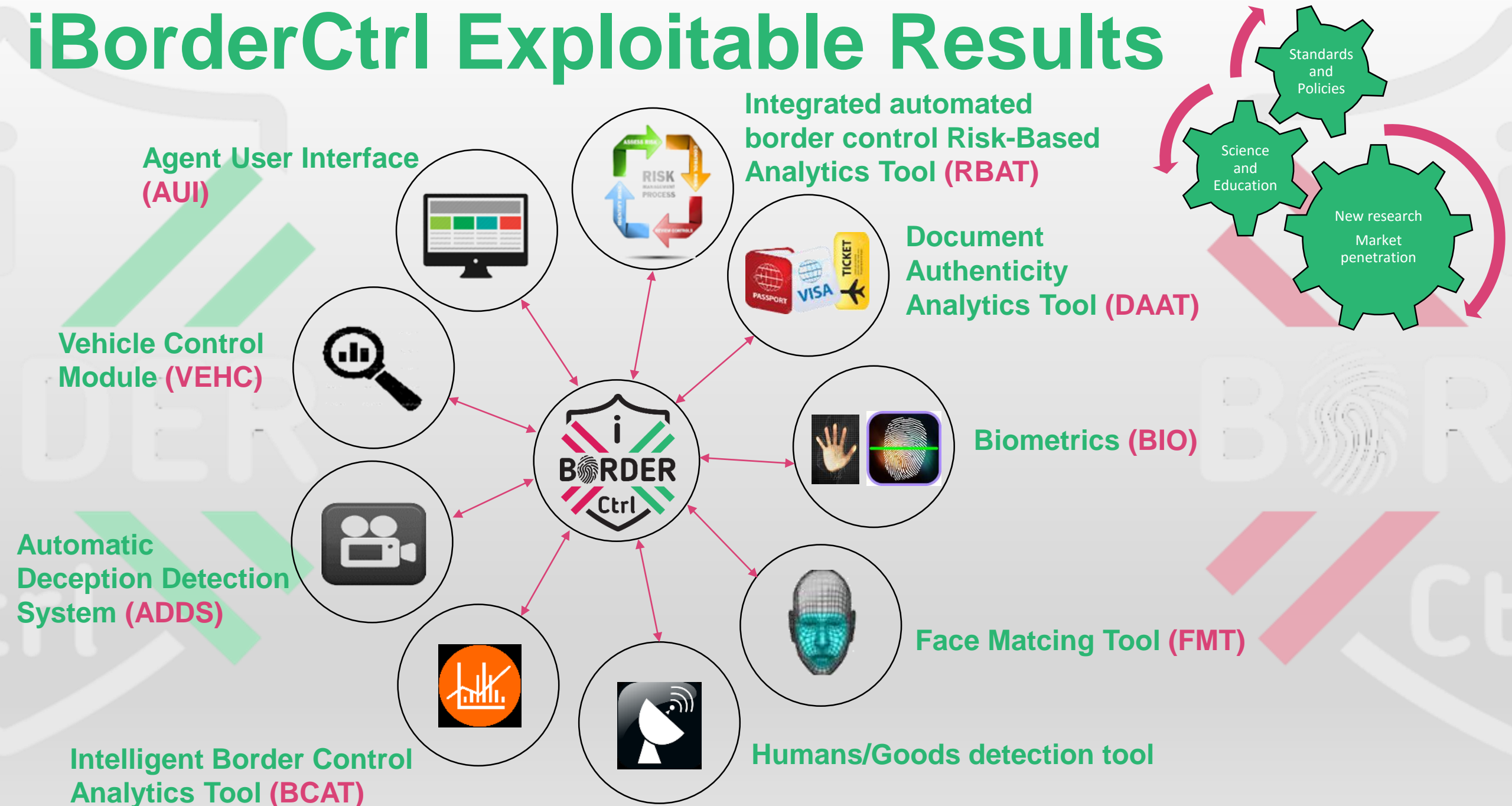


Pilots Experiments

- Hungarian Border
- TRAINOSE-Greek railway
- Borders of the Republic of Latvia
- KEMEA- Greek borders



iBorderCtrl Exploitable Results



The Partners



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The background features a light gray gradient with stylized geometric elements. On the left, there are green diagonal bars and a white curved line. On the right, there are pink diagonal bars and a white curved line. Faint, semi-transparent text fragments are visible: 'DER' on the left, 'BOR' on the right, 'erl' at the bottom left, and 'Ct' at the bottom right. A circular fingerprint-like pattern is also visible on the right side.

Thank you for your attention!