



Frontex Research and Development Unit

**Aviation Security Conference 2009**

**Edgar Beugels**  
**4 June 2009, Amsterdam**



## Presentation overview



1. Frontex
2. Research and Development Unit;
3. Border control in the EU;
4. Integrated Border Management (IBM);
5. Automated Border Crossing Systems;
6. Border Package European Commission;
7. The Passenger;
8. The Airports/Airlines;
9. Automated Border Crossing workshop.

## 1. Frontex



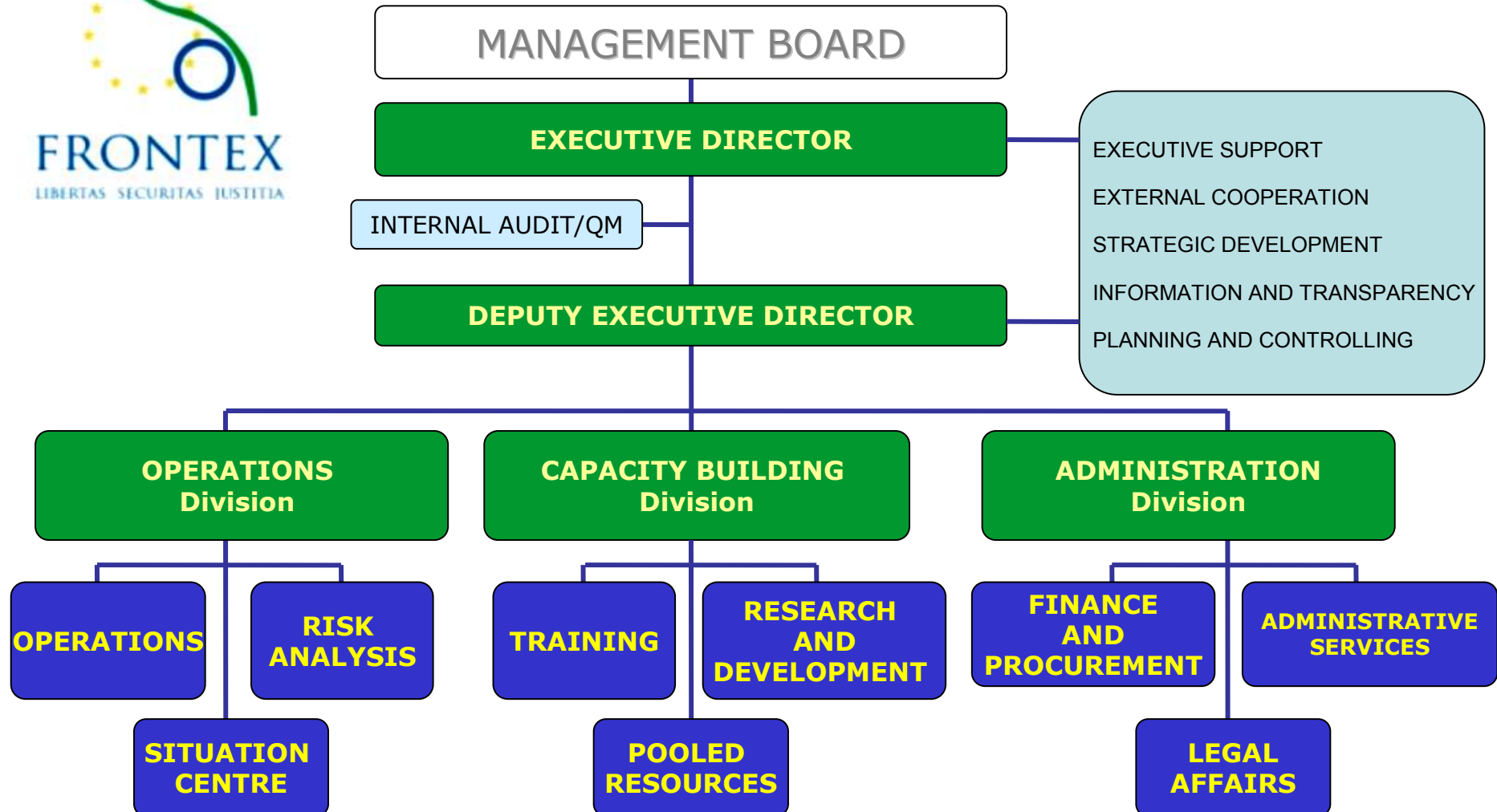
Mission:

To facilitate the application of existing and future Community measures relating to the management of the external border

by

ensuring the coordination of Member States actions in the implementation of those measures thereby contributing to an efficient, high and uniform level of control on persons and surveillance of the external borders

# 1. Frontex



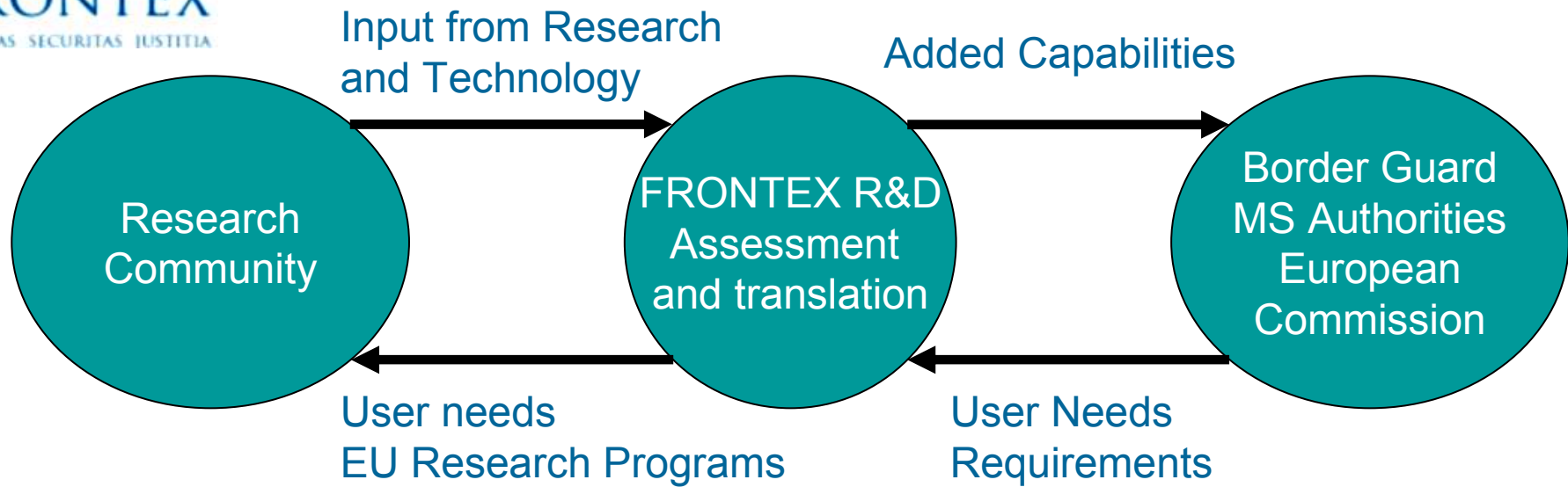
## 2. Research and Development Unit



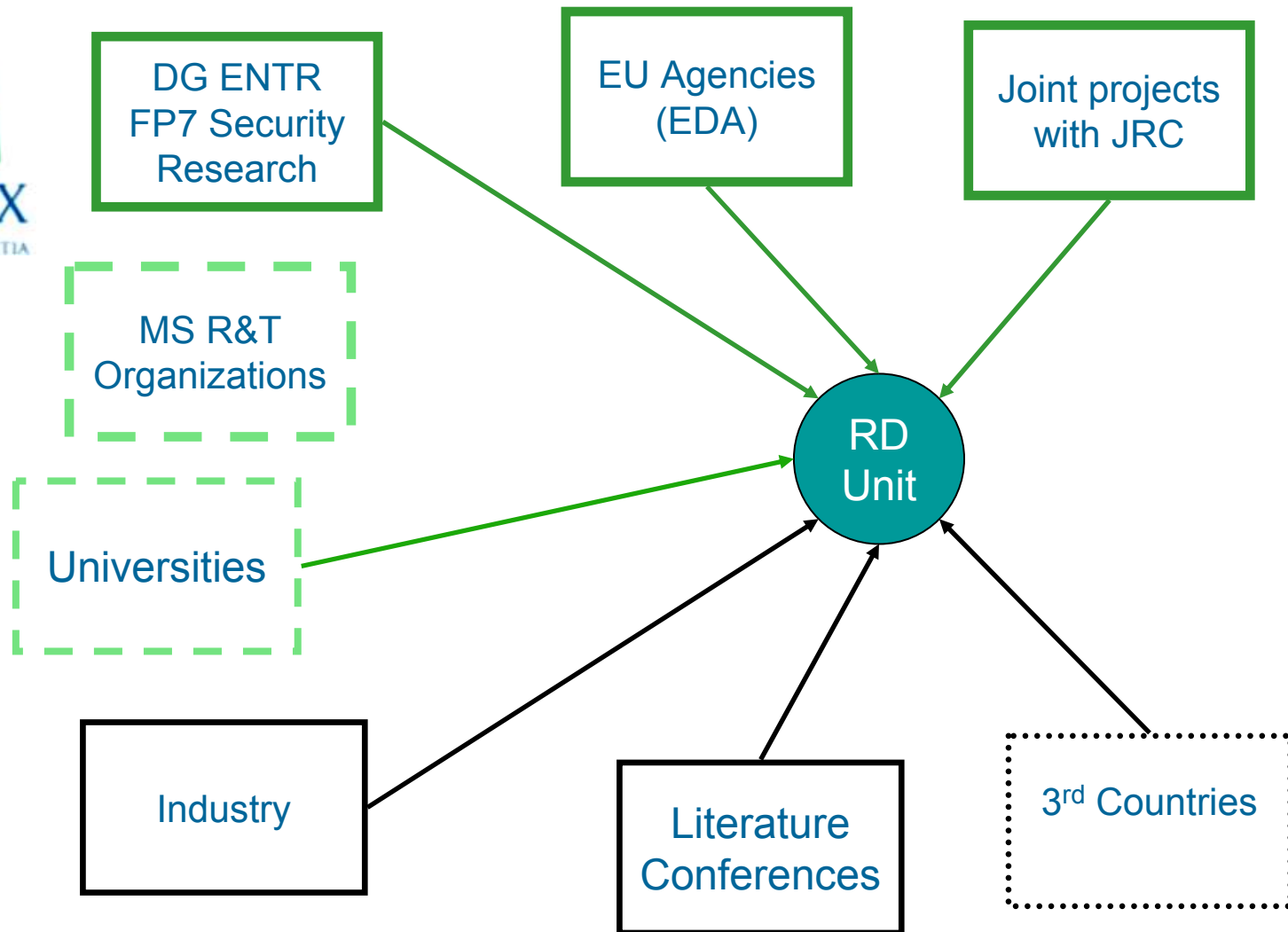
### Mission:

Follow up on developments in research relevant for the control and surveillance of the external borders and disseminate this information to the European Commission and the EU Member States

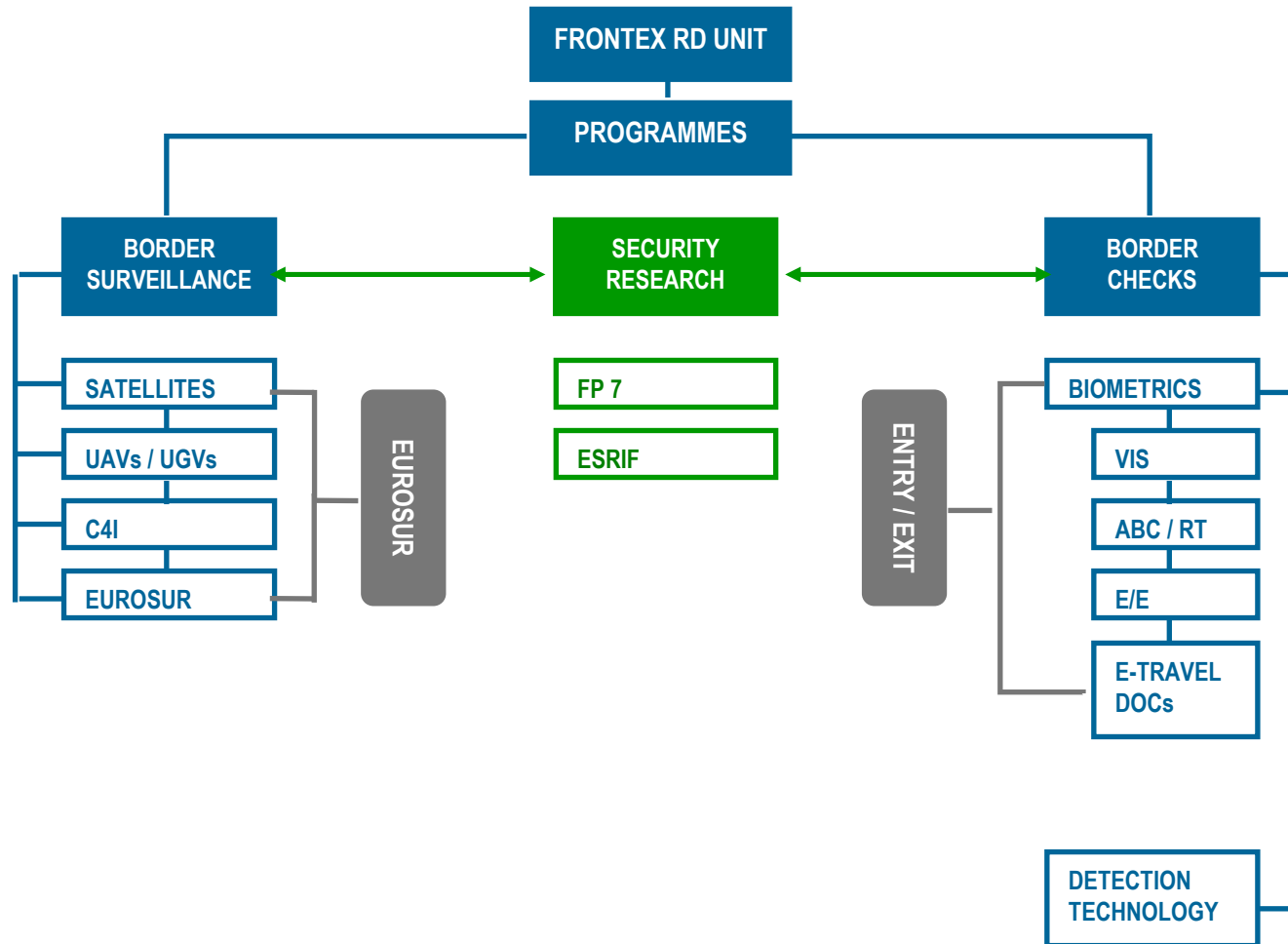
## 2. Research and Development Unit



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### 3. Border control in the EU



Some numbers:

1792 designated Border Crossing Points

approx. 300 mill. border crossings per year:

- > 160 mill. EU nationals
- > 60 mill. Third Country Nationals (no visa)
- > 80 mill. Third Country Nationals (visa)

### 3. Border control in the EU



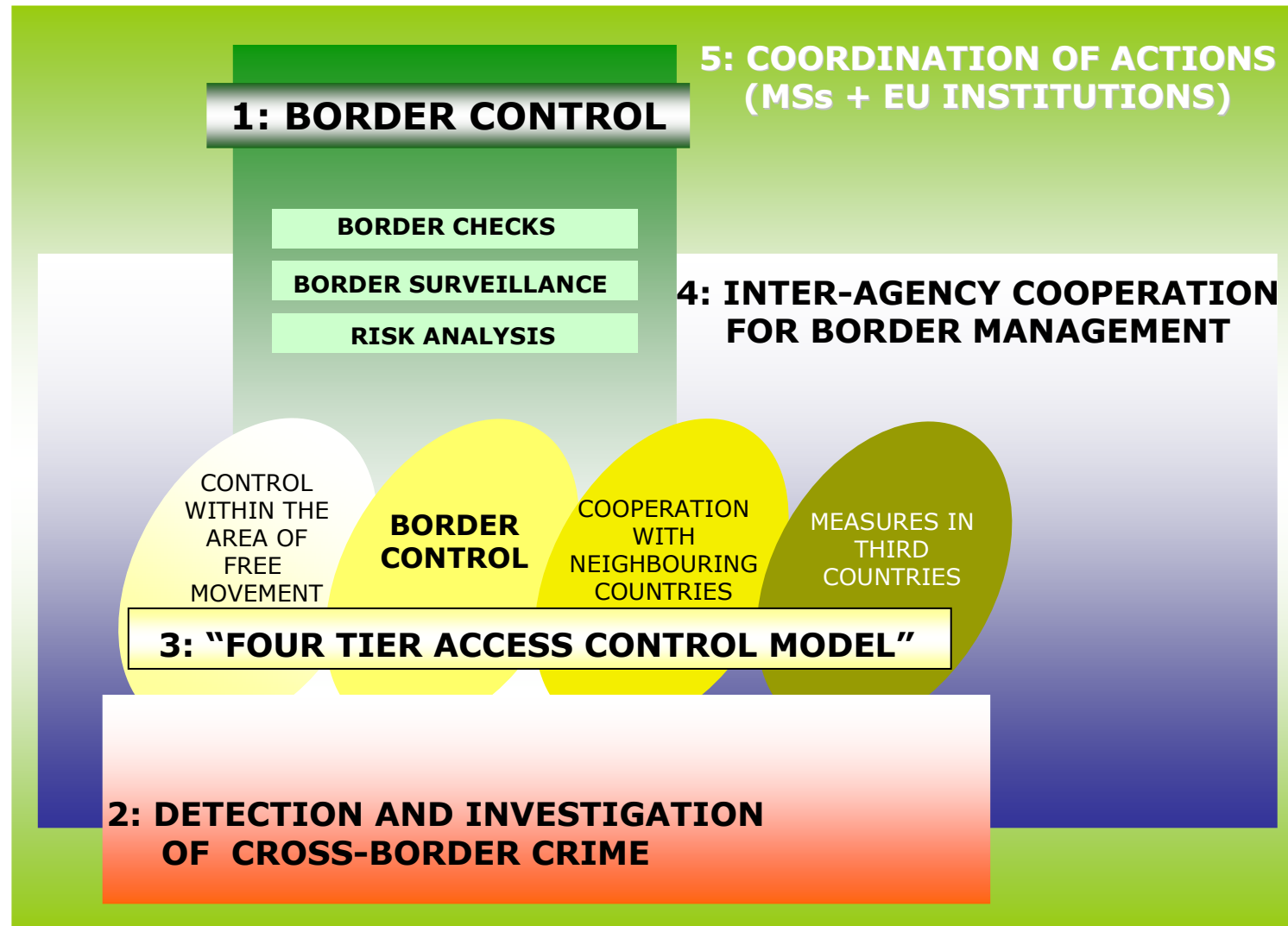
Some numbers:

Over 300.000 refusals of entry per year  
(excluding 600.000 refusals in Melilla and Ceuta,  
Spain)

approx. 8 mill. Illegal migrants within EU (80%  
inside Schengen area) -> half entered legally

The worlds most important tourist destination!

## 4. Integrated Border Management (IBM)



## 4. Integrated Border Management (IBM)



The challenge:

External borders open for bona fide flows of persons and goods, but closed for illicit, illegal activities

-> further development of an Integrated Border Management Strategy of the EU (large role for biometrics)

## 4. Integrated Border Management (IBM)



Key concept: Automation, biometrics based

In use: Automated Border Crossing Systems

To become available in 2009: Visa Information System

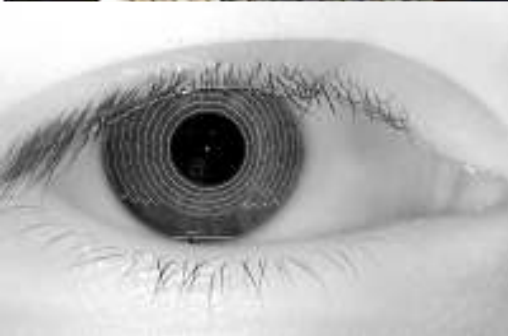
Future developments: Entry/Exit system, Registered Traveller Programs, ....?

## 5. Automated Border Crossing Systems - Biometrics



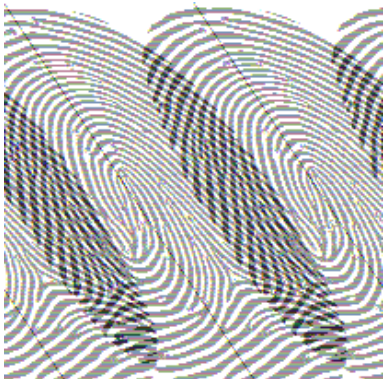
### Biometric modalities (ICAO recommendations)

- Facial recognition
- Fingerprints
- Iris



### Performance measurements

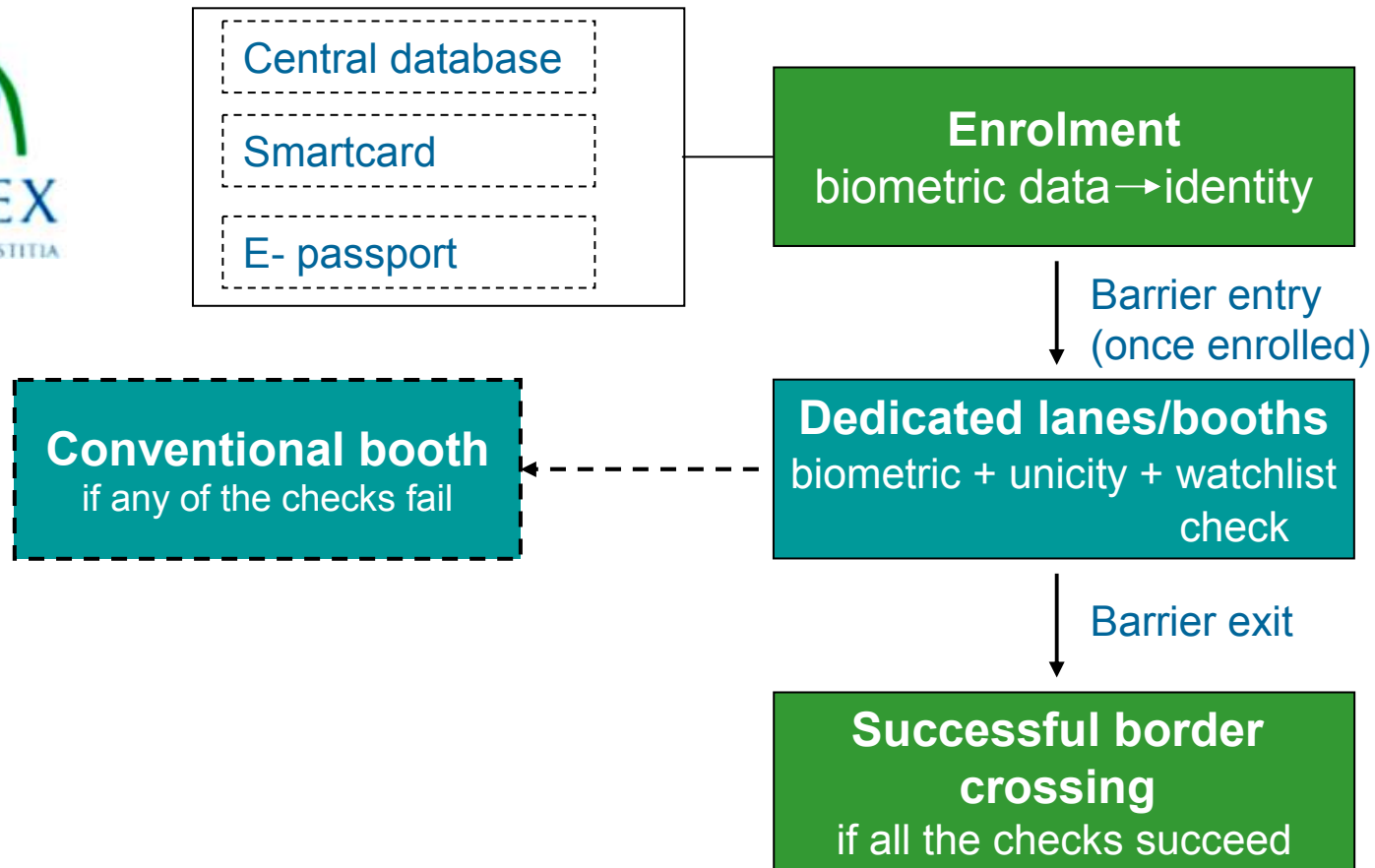
- FRR – False Rejection Rate
- FAR – False Acceptance Rate



### Biometric authentication

- Enrolment – registration with biometric system
- Verification – one-to-one matching
- Identification – one-to-many matching

## 5. Automated Border Crossing Systems – Flow Process



## 5. Automated Border Crossing Systems – Status quo



Studies carried out by Frontex on the automated border crossing systems in use in the EU and Australia (Biopass I and II studies):

In EU:

- => All but one require prior registration (registered traveller programs)
- => All systems are based on the use of biometrics (Border security requirement!)

## 5. Automated Border Crossing Systems – Status quo



Airport	Amsterdam Schiphol <b>PRIVIUM</b>	Frankfurt <b>ABG</b>	Paris Charles de Gaulle <b>PEGASE</b>	London Heathrow <b>IRIS</b>	Portugal <b>RAPID</b>
<b>Biometrics</b>	Iris	Iris	2 fingerprints	Iris	Facial image
<b>Token</b>	Contact smartcard	Passport	Contactless smartcard	None	e-passport
<b>Location of biodata</b>	Smartcard	Database	Database	Database	e-passport
<b>Participation</b>	Registration	Registration	Registration	Registration	Any EU-national holding e-passport
<b>% of movement</b>	1.4	0.07	0.08	0.9	630000 crossings as per March 2009

## 5. Automated Border Crossing Systems – Status quo



Different Automated Border Crossing systems based on:

- Different enrolment processes;
- Different tokens (Smartcard, passport, none);
- Different biometrics (Iris, fingerprints);
- Different location of biodata (smartcard, database).

Exception: RAPID system!

## 5. Automated Border Crossing Systems - e-Passports



### **e-Passport basic idea:**

- Physical security amended/added by chip based security
- Identity protected by biometrics
- Facilitation of border control

### **Types:**

- 1<sup>st</sup> generation – with photographs (50+ countries)
- 2<sup>nd</sup> generation – with fingerprints (EU by June 2009)

### **Concerns:**

- Chip and data page link
- Interoperability and conformity
- PKI certificate exchange

## 5. Automated Border Crossing Systems - e-Passports



Ongoing development and implementation of Automated Border Crossing solutions for EU-nationals holding e-passport.

- Portuguese airports (RAPID system)
- Helsinki Vantaa airport (soon: land border)
- Manchester airport
- London Stansted airport

## 5. Automated Border Crossing Systems - e-Passports



Soon in:

- Brussels
- Frankfurt

Under consideration in:

- Spain
- Austria
- Czech Republic

## 6. Border Package European Commission - Future



Communication of the European Commission on new tools for an integrated European Border Management Strategy of 13 February 2008:

“Access to automated gates can be given to those holding a biometric passport or, as an interim measure, a specific smart card issued upon individual application under the national schemes”.

## 6. Border Package European Commission - Future



Communication makes clear:

- Facilitation of border crossing for EU nationals using Automated Border Control systems using e-Passports;
- Entry/Exit system (under discussion)

The Communication of the European Commission foresees in the entry/exit recording of all third country nationals combined with capture of fingerprints;

## 6. Border Package European Commission - Future



Communication makes clear (Cont.):

- Registered Traveller Programs for Third Country Nationals (possibly also using automated border control).

## 6. Border Package European Commission - Future



Open issue:

Performance of risk analysis/assessment on data collected by the different (European) systems

## 7. The Passenger



Freedom v. Security: what is the priority?

-> Average passenger is not a criminal!

## 7. The Passenger



Do future systems provide (additional) security?

-> they are to a large extent reactive, increase waiting time (exception maybe Automated Border Crossing systems), do not prevent a person with bad intentions from arriving at the border (+ no analytical tool behind it!)

-> where is the benefit for the passenger or even for the state services that guard our borders?

## 8. The Airports/ Airlines



Main issue for airports is capacity constraints:

- 1) infrastructure
- 2) manpower (public and private sector)

-> more effective and efficient use of space and personnel;

-> solutions that deal with large groups of the travelling public (e.g. wide use of e-passports);

-> solutions that break down long standing “barriers”.

## 9. Automated Border Crossing (ABC) workshop



Date: 7 April 2009  
Location: Frontex Headquarters  
Participants:

- 23 MSs
- 6 system integrators and airport operators
- EC: DG JLS and JRC
- Frontex

Topic of high interest and importance!

## 9. ABC workshop - Conclusions



- Number of MSs implementing ABC systems is growing
- Harmonized approach is the way forward
- Further studies on the vulnerabilities and performance needed
- Minimum requirements, guidelines and best practices
- Public Key Infrastructure exchange (via ICAO only?)

## Conclusions and next steps



### EC welcomes development of:

- ABC systems based on e-Passports
- Coherent approach
- Common security baseline
- Minimum requirements, guidelines and/or best practices for such systems

## Conclusions and next steps



### Frontex role:

- Develop minimum requirements/guidelines and best practices for ABC systems (Member States for discussion and proposal to EC)
- Role in PKI certificate exchange

## What about security?



Question:

How secure is a previously vetted passenger?

## Goal



To make the external border more secure

## Contacts



**FRONTEX**  
Rondo ONZ 1  
00-124 Warsaw  
Poland

Tel: (+48) (0) 22 544 95 00

Fax: (+48) (0) 22 544 95 01

Email: [frontex@frontex.europa.eu](mailto:frontex@frontex.europa.eu)

[www.frontex.europa.eu](http://www.frontex.europa.eu)