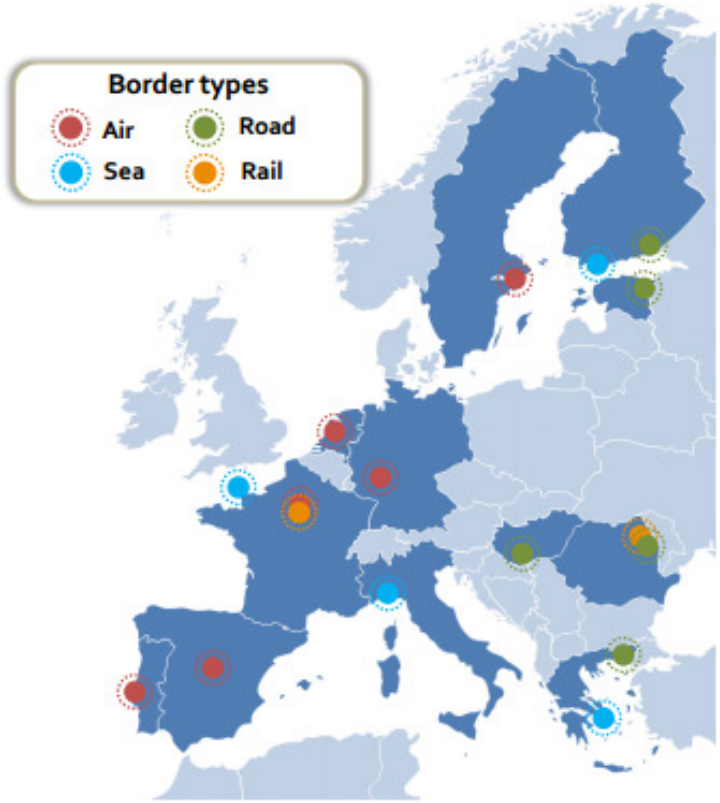
EU Smart Borders
Operational Pilots

INTERNATIONAL BIOMETRIC PERFORMANCE CONFERENCE
Evaluation and Performance of Biometric Technologies

May 3 – 5, 2016: Gaithersburg, MD

Smart Borders Pilot in a nutshell	(March September, 2015)
Scope	Air, sea and land borders crossing points (BCPs)
Member States	12 (DE, EE, EL, ES, FI, FR, HU, IT, NL, PT, RO, SE)
Border crossing points	18
Test cases	78 test variations
TCN travellers	58.000
Border guards involved	About 350
Biometrics	Fingerprints (FP), facial image (FI) and iris
Process accelerators	ABC gates, kiosks
Desk research	Spoofing, VIS and travel document number, web service



EU Smart Borders
Finland Pilot

The impetus for the pilot was the EC legal proposals on establishing the Entry-Exit System (EES) and the Registered Traveller Programme (RTP) and the amendments to the Schengen Borders Code (SBC) thereof. The main objectives of the pilot are:

1. To **test the practical and technical feasibility** of the processes and implementation foreseen in the so called Smart Borders package;

2. To **define the most feasible solution** to implement the above mentioned systems and ABC procedures based on them for to be implemented later;

3. To **contribute to the discussion on legislative proposals**, in particular as regards to the articles connected to the technical feasibility of the systems;

4. To **contribute to the national preparations** of the Smart Borders package in Finland.

EU Smart Borders
Finland Pilot

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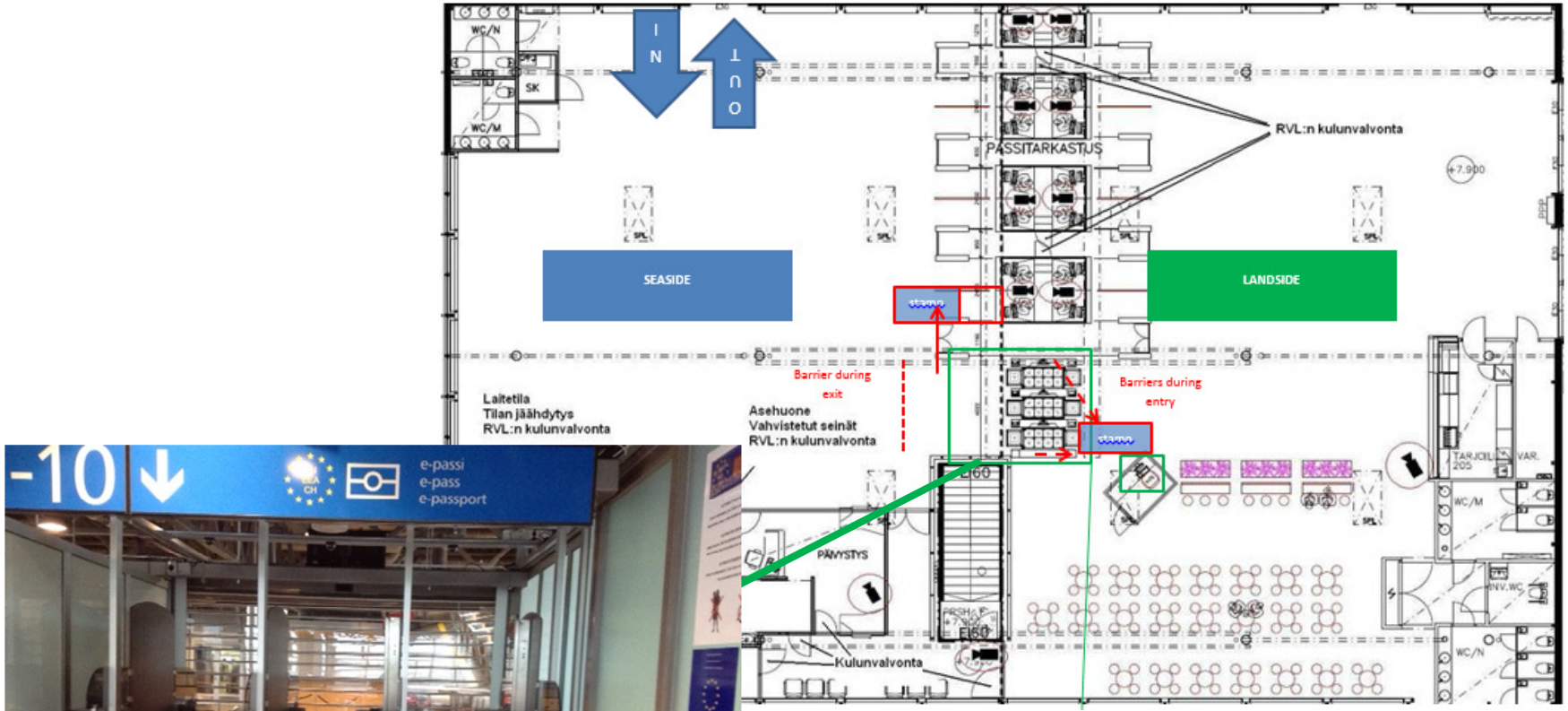

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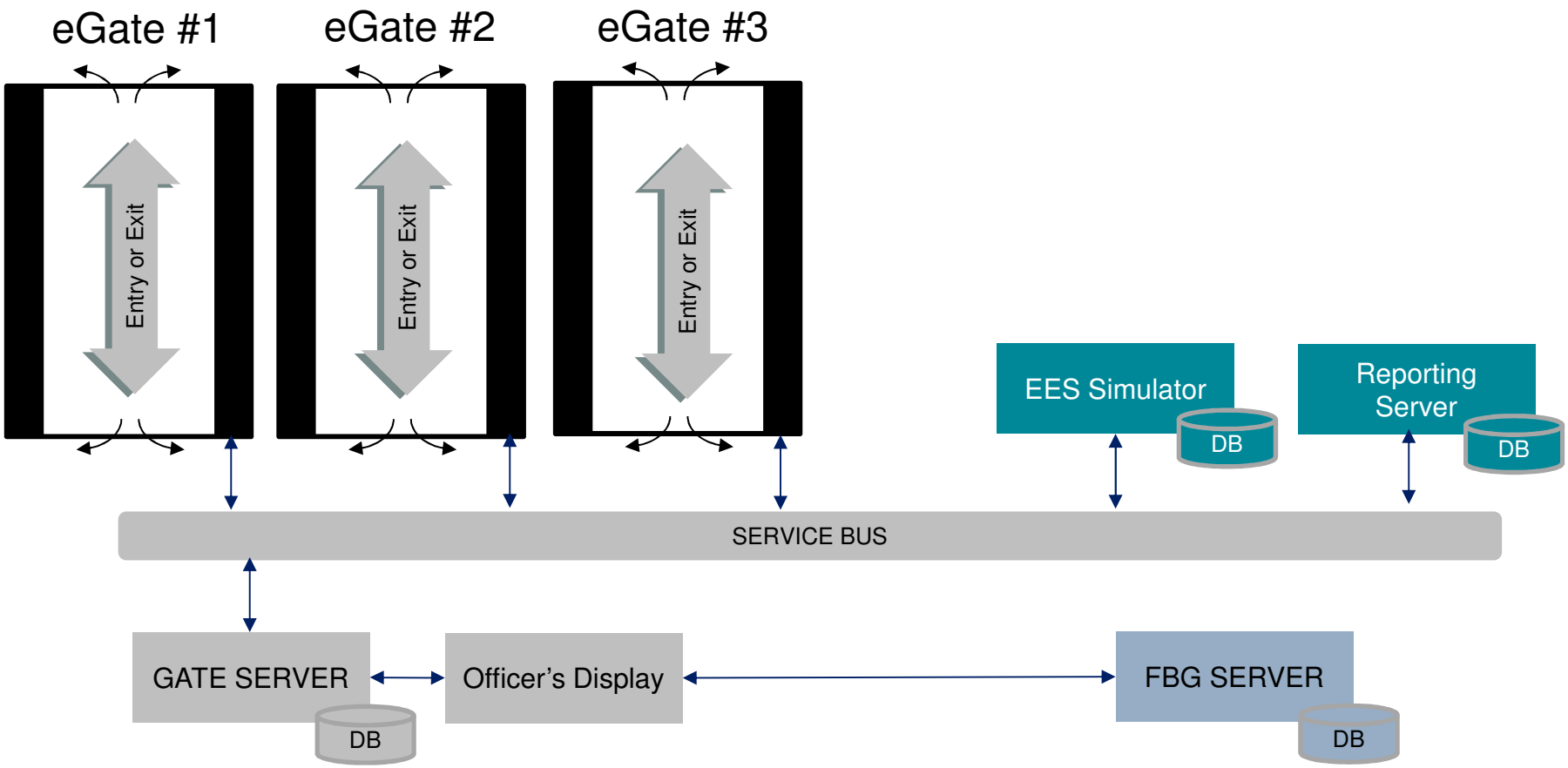

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Single Finger Livescan
for 1- and 2-print capture

4 Finger Livescan
for 4- and 8-print capture

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Identification

- Status
- Identify a TCN
- Verify a TCN
- Search identity
- Retrieve identity

Administration

- Record encounter
- Amend data
  - Extend RTP
  - Revoke RTP status
  - Update Allowed Number of Days

Enrolment

- Create enrolment
  - Pre-enroll
  - Full enroll
- Withdraw enrolment

Reporting

- Generate Notifications
- Request report
- Retrieve report
  - e.g.Overstayers

Authorization Enforcement

- Access to services based on role
- Access to response information based on role

Data Retention

- PII deleted after TBD days if Exit recorded; TBD days otherwise
- Transaction data (no PII) retained for business and operations monitoring and analysis

TCN – Third Country National
MS – Member State

EES – Entry Exit System
RTP – Registered Traveler Program

- Used in Pilot
- Not used in Pilot

EU Smart Borders
Finland Pilot

The Schengen Borders Code has no provisions on the recording of travellers' cross border movements into and out of the Schengen area.

As a general rule, third country nationals have the right to enter for a short stay of up to 90 days within any 180 day period.

Currently the stamping of the travel document indicating the dates of entry and exit is the sole method available to border guards and immigration authorities to calculate the duration of stay of third country nationals and to verify if someone is overstaying.

These stamps can be difficult to interpret: they may be unreadable or the result of counterfeiting. Similarly, it is difficult for consulates having to process visa applications to establish the lawfulness of previous visas on the basis of stamps present in the travel document. As a result, the whole procedure is considered error prone and not always systematically implemented.

from: REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL COM(2016) 194 final

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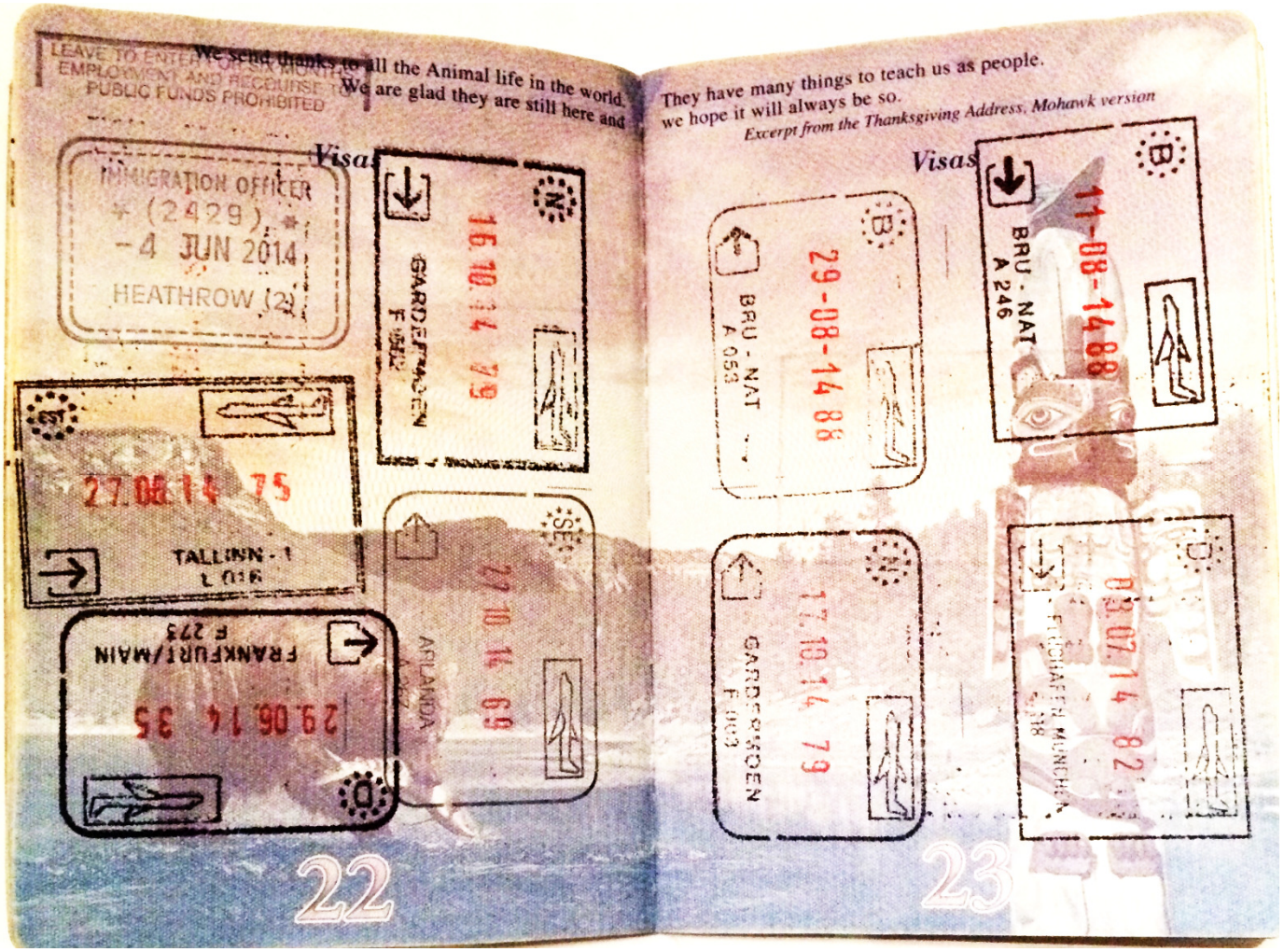

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Finland Pilot

TRANSACTION COUNT

TRANSACTION TIMING

Transaction Detail Report

Passenger Processing	Transaction Count	End-To-End (sec)	To Decision (sec)
Total Number of Traveller Count		6107	
Success Rate		100.00	
Successful Average		42	40
Fastest successful transaction		16	15
Slowest successful transaction		443	442
Successful 1st Quartile	6107		
Successful 2nd Quartile		56	55
Successful 3rd Quartile		34	32
Successful 4th Quartile		101	100
Unsuccessful Median Average			
Slowest unsuccessful transaction	0		

Fingerprint Transaction Detail Report

CAPTURE TIME

Processing Speed Detail

Fingerprint Captured	Slowest Time (sec)	Average Time(sec)	Fastest Time (sec)	Total Number of Fingerprint Captured
1	85	13	3	688
2				0
4	119	19	8	977
8	116	28	12	398

CAPTURE QUALITY

Quality Assessment

	Lowest Score	Highest Score	Average Score	Total Number of Fingerprint Captured
Left Index	5	1	1.87	352
Left Little	5	1	2.24	347
Left Middle	5	1	1.73	353
Left Ring	5	1	1.68	353
Left Thumb	2	2	2.00	1
Right Index	5	1	1.91	1699
Right Little	5	1	2.49	1030
Right Middle	5	1	1.79	1130
Right Ring	5	1	1.80	1223
Right Thumb	2	2	2.00	1

Smart Borders
Finland Pilot

video analysis

Number of fingerprints captured	Event	Transaction timestamp YYYY/MM/DD HH:MM	Transaction time end to end MM:SS
1	Fastest	2014/11/13 08:46	00:27
	Slowest	2014/11/05 09:19	01:55
4	Fastest	2014/11/02 09:26	00:34
	Slowest	2014/11/13 08:56	02:19
8	Fastest	2014/11/01 08:34	00:38
	Slowest	2014/11/01 09:22	02:37

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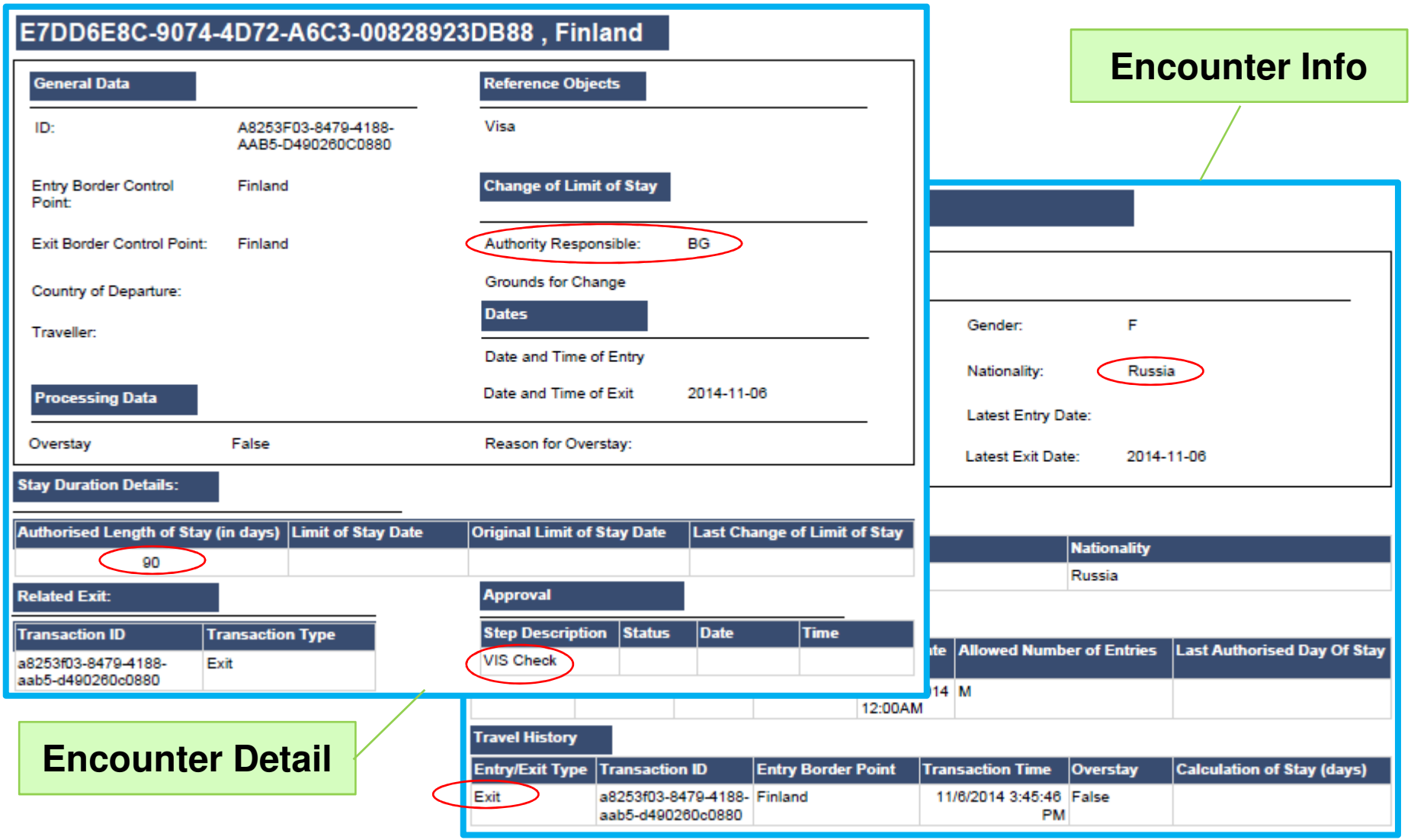


E7DD6E8C-9074-4D72-A6C3-00828923DB88 , Finland

General Data

ID:	A8253F03-8479-4188-AAB5-D490260C0880
Entry Border Control Point:	Finland
Exit Border Control Point:	Finland
Country of Departure:	
Traveller:	

Processing Data

Overstay	False

Reference Objects

Visa

Change of Limit of Stay

Authority Responsible:	BG
Grounds for Change	

Dates

Date and Time of Entry	
Date and Time of Exit	2014-11-06
Reason for Overstay:	

Stay Duration Details:

Authorised Length of Stay (in days)	Limit of Stay Date	Original Limit of Stay Date	Last Change of Limit of Stay
90			

Related Exit:

Transaction ID	Transaction Type
a8253f03-8479-4188-aab5-d490260c0880	Exit

Approval

Step Description	Status	Date	Time
VIS Check			

Encounter Info

Gender:	F
Nationality:	Russia
Latest Entry Date:	
Latest Exit Date:	2014-11-06

Nationality
Russia

te	Allowed Number of Entries	Last Authorised Day Of Stay
14 12:00AM	M	

Travel History

Entry/Exit Type	Transaction ID	Entry Border Point	Transaction Time	Overstay	Calculation of Stay (days)
Exit	a8253f03-8479-4188-aab5-d490260c0880	Finland	11/6/2014 3:45:46 PM	False	

Encounter Detail

Smart Borders
Finland Pilot

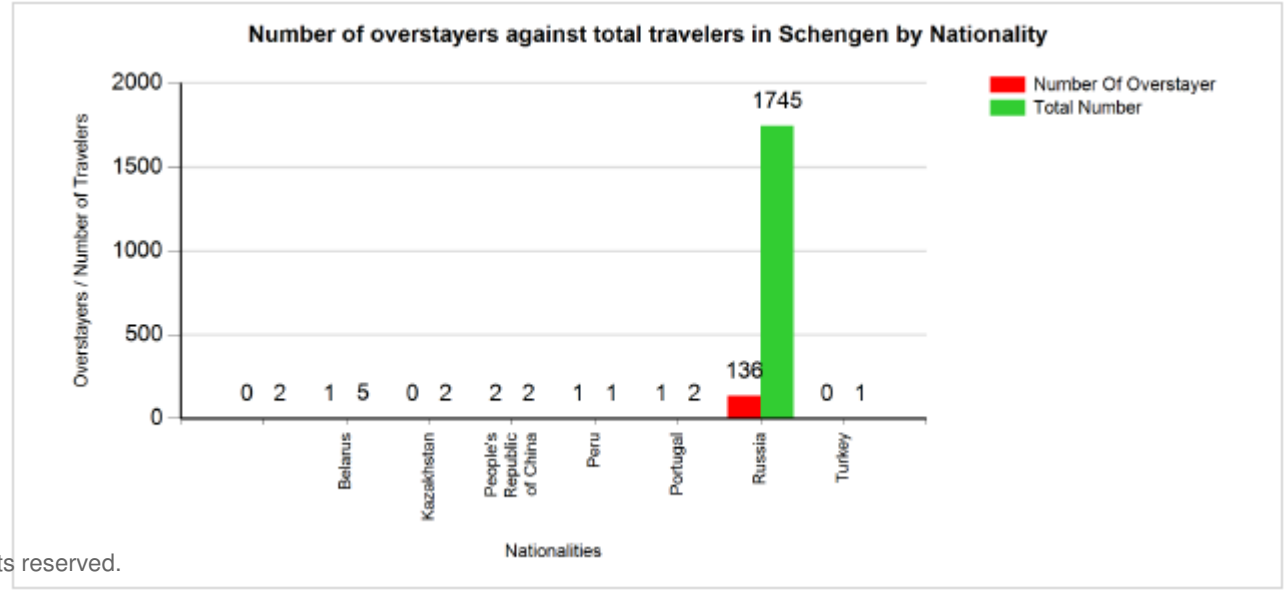
Entire Pilot

Nationality	Volume
Belarus	15
China	14
Georgia	1
Kazakhstan	5
Pakistan	1
Peru	1
Philippines	1
Portugal	15
Russia	6021
Turkey	2
Ukraine	2

Number of overstayers against total travelers in Schengen by Nationality

Till Date: 07/09/2014

Nationality	Number Of Overstayers	Total Number
	0	2
Belarus	1	5
Kazakhstan	0	2
People's Republic of China	2	2
Peru	1	1
Portugal	1	2
Russia	136	1745
Turkey	0	1

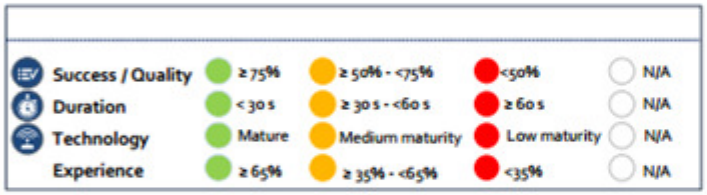


EU Smart Borders
Summary

4 fingerprints (TC1) – at 11 border-crossing points, 8 FPs (TC2) – at 8 BCPs, 10 FPs (TC3) – at 6 BCPs

Air	Frankfurt (DE) | Schiphol (NL) | Madrid (ES) | Charles de Gaulle (FR)
Sea	Helsinki (FI) | Piraeus (EL) | Genoa (IT)
Land (road)	Kipoi (EL) | Udvar (HU) | Vaalimaa (FI)
Land (train)	Iaşi (RO)

Outcome: the pilot confirms that it is feasible to enrol fingerprints at all types of borders in various set-ups. However, in practice, enrolling four fingerprints is faster than enrolling eight or ten, although a higher number of fingerprints will deliver better accuracy for subsequent use. The quality of the fingerprints enrolled is generally fit for purpose. Enrolling fingerprints in controlled conditions is seen as the biometric identifier that is the least intrusive to travellers, according to both travellers' and border guards' feedback.



Main findings

Success/quality

- The quality of fingerprint enrolment cannot be directly linked to the number of fingerprints enrolled;
- There are currently no certification standards for contactless scanners;
- When the success rate was below 30%, this was mainly due to set-up and technical constraints;
- Identification accuracy can reach around 99.3% based on performance predictions provided by a number of vendors and

EU Smart Borders
Background

EUROPEAN COMMISSION

April 6, 2016

Brussels, 6.4.2016
COM(2016) 194 final

2016/0106 (COD)

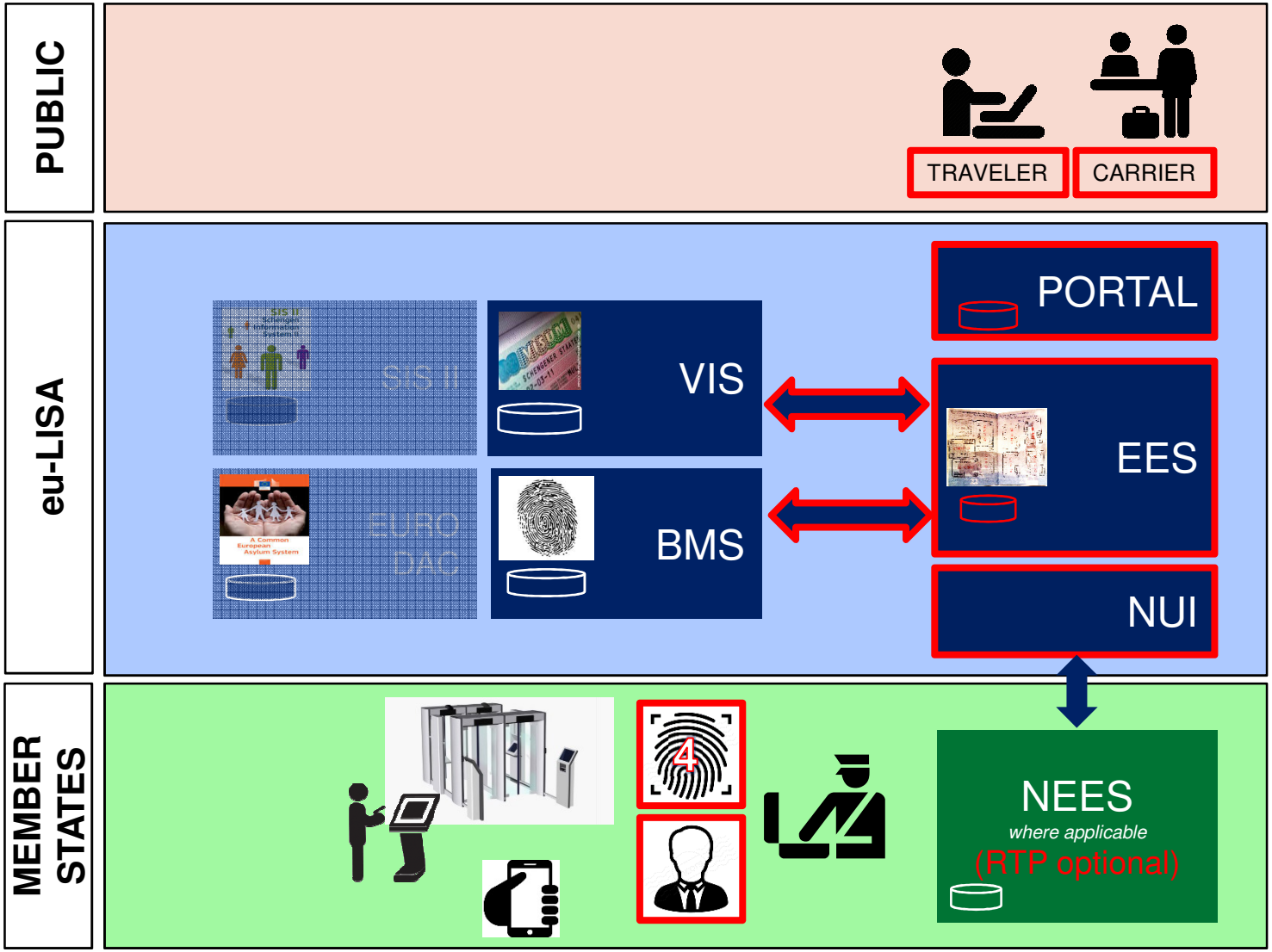
Proposal for a

REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

establishing an Entry/Exit System (EES) to register entry and exit data and refusal of entry data of third country nationals crossing the external borders of the Member States of the European Union and determining the conditions for access to the EES for law enforcement purposes and

amending Regulation (EC) No 767/2008 and Regulation (EU) No 1077/2011

EU Smart Borders
COM Strategy



8 U.S. Code § 1365b - Biometric entry and exit data system

The entry and exit data system shall include a requirement for the collection of biometric exit data for all categories of individuals who are required to provide biometric entry data, regardless of the port of entry where such categories of individuals entered the United States.

…"registered traveler program" means any program designed to expedite the travel of previously screened and known travelers across the borders of the United States.[1]

…incorporates available technologies, such as biometrics and e-passports, and security threat assessments to expedite the screening and processing of international travelers, including United States Citizens and residents, who enter and exit the United States.[2]

[1] 8 U.S. Code § 1365b ¶ (K) Expediting registered travelers across international borders (2) Definition
[2] 8 U.S. Code § 1365b ¶ (3) International registered traveler program (A) In general

https://www.gpo.gov/fdsys/pkg/USCODE-2011-title8/pdf/USCODE-2011-title8-chap12-subchapII-partIX-sec1365b.pdf

8 U.S. Code § 235.1 Scope of examination

... Application to lawfully enter the United States shall be made in person to an immigration officer at a U.S. port-of-entry when the port is open for inspection, or as otherwise designated in this section. [1]

A person claiming U.S. citizenship must establish that fact to the examining officer's satisfaction and must present a U.S. passport if such passport is required under the provisions of 22 CFR part 53. [2]

8 U.S. Code § 235.7 Automated inspection services

… advance inspection and identification, when the enrolled participant satisfies the conditions and requirements set fourth in this section, satisfies the reporting requirements of §235.1(a) [3]

[1] 8 CFR § 235.1 Scope of examination (a) General
[2] 8 CFR § 235.1 Scope of examination (b) U.S. citizens
https://www.gpo.gov/fdsys/pkg/CFR-2012-title8-vol1/pdf/CFR-2012-title8-vol1-part235.pdf
[3] 8 CFR §235.7 - Automated inspection services
https://www.gpo.gov/fdsys/pkg/CFR-2015-title8-vol1/pdf/CFR-2015-title8-vol1-sec235-7.pdf

EU Smart Borders
Further Reading

In October 2014, the first stage was completed with the delivery of the Technical Study (see the executive summary) and Costs Study .

The testing phase took place in 12 countries in 18 air, sea and land border crossing points and involved nearly 58 000 third country national travelers and about 350 border guards. In November 2015, the testing phase carried out by eu-LISA was completed with the delivery of the Smart Borders Pilot report on the technical conclusions (see also the executive summary of the report and the annexes to the technical report).

On 6 April 2016, the Commission adopted a revised legislative proposal for Smart Borders. The revised legislative proposal for Smart Borders includes: a Regulation for the establishment of an Entry/Exit System (annex) and a proposed amendment to the Schengen Borders Code to integrate the technical changes needed for the Entry/Exit System (annex).

http://ec.europa.eu/dgs/home-affairs/what-we-do/policies/borders-and-visas/smart-borders/index_en.htm

EU Smart Borders

Thank You

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