SSPC

J.J.M. (Hans) de Moel, B.Sc.
ICAO, Montreal, 7-9 OCT 2014
Introduction

Border Control at Schiphol Airport:

Basis: the identity triangle (theory)

Processes: man versus machine (theory and practice)

Self Service Passport Control (practice)
Identity triangle

1. Verification
2. Authentication
3. Identification

Royal Netherlands Marechaussee
Checks at manual in NL

District Schiphol
Identity triangle

1. Identification in ESTA
2. Authentication by scanner or staff
3. Verification by algorithm or staff

District Schiphol
Identity triangle

1. Authentication by document scanner
2. Identification in NL-SIS-2
3. Verification by biometrics

District Schiphol
Identity triangle

False Registration

FORGERIES

IMPOSTERS

FRAUD
ABC Systems

Automating the processes from man to machine
ABC Systems

Change in documents:
• Non-MRTD: Handwritten
• MRTD: Machine readable
• e-MRTD: machine readable with chip

Change in security features:
• Physical security features
• Electronic security features

Change in border control
• Manual check
• Automated check

See KEESING Journal of Documents & Identity, issue 43, 2014, pages 30-33
SSPC is a one step process

ABC variations:

One step process
• all actions within mantrap

Two step process
integrated:
• eligibility before and verification in mantrap
segregated:
• eligibility at kiosk and verification at gate

Eligibility: EU citizens with e-passport and >18 years only
EU
18+
e-passports only
about 30% of pax
but <10% use SSPC
ABC Systems

ABC Poort cluster
- ABC poort systeem (op elk ABC poort en met server en monitor)
- ABC poort (1 single border, passagio, EMR, Camera, door, etc.)

No-Q Systeem cluster
- Beheersysteem gestuurd
- Regeling vrijwijken gestuurd
- Communicatie met ABC en extern register cluster

Externe Registratie systemen
- Passagier informatie (OPS/NSIS, HKS, API, Pardex, DCS)
- Data in Information (Time, xDB, NDS, PKI/NL-NSPOC)
- Management Information
- Authenticatie (DBS)
Currently installed at Amsterdam Airport Schiphol:

6 clusters of 6 e-gates = 36 e-gates

1 cluster of 6 e-gates is operated by 2 border guards:
• 1 mobile border guard (assistance / false rejections)
• 1 supervisor (monitoring / false acceptance)
• current transaction time: 30 sec/pax
• about 50,000 pax/week

In 2015 to be expanded to 72 e-gates
ONE STEP PROCESS
ABC Systems

Developing the system:

• System as a service: higher price, more flexibility

• System errors versus user errors:
  • time-outs, loops, lighting
  • following instructions

• Practical adjustments:
  • document feeder
  • user interface
Identity triangle

Automated Border Control Challenges

1 Authentication by document scanner
Current types of passports:

**Non e-passports:**
- check model
- check physical security features

**E-passports:**
- check model (generation 1 / generation 2)
- check physical security features
- check electronic security features
  - Passive Authentication
  - Chip Authentication
  - Active Authentication
Passive Authentication – extended version

• Trusted certificate store (ICAO PKD or similar)
• Verification of Security Object (EF.SOD) (on chip)
• Verification Document Signer certificate (chip or store)
• Validity check DS and CSCA certificates (store)
• Revocation check DS certificate (CRL’s in store)
• Verification of integrity datagroups (hash checks)

CONSISTENCY:
• Comparison of DG’s in EF.COM and EF.SOD
• Comparison of ‘ISSUER’ in EF.SOD and EF.DG1
• Comparison of data in EF.DG1 and MRZ
Examination

Electronic versus physical security features
Challenges

Is biopage photo compared to chip photo (DG2)?
Checking a passport

- Watermark
- ImagePerf
- Field comparison
- UV-pattern and thresholds
- Optical variable feature
- Microtext
- Calculation

What can a document scanner **DO** and what **NOT**?
Challenges

Distinguishing print techniques easy for humans, difficult for machines
Identity triangle

2

Identification

Automated Border Control Challenges
Challenges

**Typo (by ear)**
- Joke van der Steen (NLD)
- Joke Vandersteen (BEL)
- Yoka Fonda Stayne (USA)

**Transcription**

**Order**

**Conversions.**
- VIZ -> MRZ
- Hößl = HOESSL
- Hößl = HOEBL
- Hößl = HOBL

**Ping Li**
or
**Li Ping**

**Li = 李 = LEE**

**力历枒立苂泶**

**礼涙俚吏曆粱**

**Mohamed**
- Mahmed
- Mechmet
- Mohamad
- Mohammed
- Muhamad

**Ali Ben Mohamed**
or
**Mohamed Ben Ben Ali**
Does the MRZ contain all the appropriate data?

VIZ in NLD: Erika Musterfrau, spouse of Van der Steen
MRZ: P<NLDMUSTERFRAU<<ERIKA<<<

VIZ in DEU: Erika van der Steen, born as Musterfrau
MRZ: P<D<<VAN<DER<STEEN<<ERIKA

Should personal data be more uniform in passports?
District Schiphol

Identity triangle

Automated Border Control Challenges
Challenges

Facial comparison

Royal Netherlands Marechaussee

> 90%
Challenges

Facial comparison
Challenges

Facial comparison

Royal Netherlands Marechaussee

< 10%

District Schiphol
Challenges

Facial comparison

Royal Netherlands Marechaussee

< 10%

District Schiphol
QUESTIONS?
Hans de Moel
District Schiphol
📞 + 31 20 – 603 9175 (office)
📞 + 31 6 – 2096 2032 (mobile)
✉️ JJJM.d.Moel@mindef.nl