National Preparations towards the Operation of the European Visa Information System (VIS)

IBPC 2012, NIST, Gaithersburg

06.03.2012, Fares Rahmun
VIS Overview

Start of Operation:
October 11th 2011

Federal Foreign Office
- Visa Application

Federal Police
- Border Control
- Territory Control
- Border Visa

ABHn  BAMF  Police  Secr. Service
- Search
- ID – Check
- Extension
- Shortening
- etc.

EU VIS

Federal Office of Administration (BVA)
- Searching
- Linking
- On basis of alphanumeric and fingerprint search
- Highly Automated
- Human operators
- supported by Facial Recognition

Bundesverwaltungsamt
Der zentrale Dienstleister des Bundes
VIS Overview

EU VIS

N-VIS

C-VIS

BMS

Nat. Applic.

EU Registered Traveler

Bundesverwaltungsamt
Der zentrale Dienstleister des Bundes
Regional Rollout regarding Enrolment (2010/49/EG)

- Region 1: "North Africa" – Egypt, Algeria, Lybia, Mauritania, Morocco, Tunisia → October 11th 2011
- Region 3: "Gulf Region" – Afghanistan, Bahrain, Iran, Iraq, Yemen, Katar, Kuwait, Oman, Saudi Arabia, VAE → October 2nd, 2012
■ **Schengen Border Code:**

■ Border Posts need to check at least by "using the number of the visa sticker". After 3 years of operation: usage of fingerprints mandatory

■ State: usage of biometric verification increasing
German Federal Police – Individual Implementation

Border Control – Primary
• Verification 1:1

Border Control – Territory
• Verification 1:1 (mainly – others possible)

EU VIS
Federal Office of Administration (BVA)

Bundesverwaltungsamt
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German Federal Police – BVA Implementation

**Border Control – Secondary**
- Verification 1:1, Search 1:n

**Border – Visa Enrolment**
- Enrolment, Linking, Search 1:n

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EU VIS

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**BioDEVII (2007 - 2010):**
- European Pilot Project (8 participating member states)
  - Enrolment, Verification and Identification with focus on fingerprints
  - Organizational consequences for consulates and border posts
  - Interoperability & compliance with international standards
- Main Experiences in the field of fingerprint enrolment / quality of biometrics
- Presentation at IBPC 2010

**Customers**

**BVA = “Mini VIS”**
- AFIS Hosting
- Dactyloscopic Service
- Evaluation, Statistics
- Specification Biometric Software Solutions
Project “VIS PILOT” – (2011)
Cooperation
- German Federal Police (BPOL)
- Federal Office of Administration (BVA)
- Federal Office for Information Security (BSI)
- Secunet (Contractor)

Complete Setting of 1st and 2nd border position
Voluntary Participation
- Signed Declaration of Consent
  → Data Protection

Enrolment
- ~ 200 Police Staff
- Basic Alphanumeric Data
- Fingerprints (Crossmatch Guardian)
- Photo (webcam or scanner or foto cabin)
- Printing of “real” visasticker
- **Simulation of 1st position (02/03 2011)**
  - 1:1 verification with number of visa sticker

- **Usage of 1-finger and 4-finger scanner**
  - Dermalog ZF1 / L SCAN Guardian
  - Comparison: Ease of use, performance

- **Border Control Simulations**
  - 1 Step - 2 Step Approach
  - 1 finger – 4 finger scanner
  - Usage of Permutation
  - Simulation of Identity Frauds
  - Simulation of Fake-Finger-Attack
  - Optimization of Implementation
  - Enduser Feedback (Police Staff)
  - Biometric performance tests
  - ….
Simulation of 2nd position

- Biometric enrolment with 4-finger scanner
- Verification (1:1)
- Identification (1:n)
- Issuing of Border visa
- Software Training
- Discussions about organizational process
Simulations of error and identity fraud scenarios

- Attempt to enter with wrong visa or passport
- Attempt to enter with „faked fingers“
- Handling or errors or questionable results of the system
- Analysis and reviewing of biometric results
- Interviews with active police staff

- Not necessarily scientific, but important end user feedback, to
  → optimise software implementations (ergonomics)
  → design organisational processes
Training Material & Training Video for Border & Consulates including

- Legal Background
- Maintenance Instructions (counter layout, calibration, cleaning etc.)
- FAQ regarding biometrics (quality assessment, tricks & tools etc.)
- Process (workflow, possible protection against fakes etc.)
Additional time needed – 1st position / primary (Airport)

- Provided measurement: Starting after having found the visa sticker in the passport, End: result received
- Searching the visasticker in passport will add another 10 seconds (estimated)
- Measurement valid if no „complications“ arise

<table>
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<th>Zeitbedarf 1. Grenzkontrolllinie</th>
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<td>Kompletter Visa-Grenzkontrollprozess</td>
<td>26.9</td>
<td>36.1</td>
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Sekunden
Permutation (2.203 Repetitive Verification Flag):

- **Normal**: Matching of Live-FP with the exact reference in stored record (e.g. left index finger $\leftrightarrow$ left index finger)

- **Option Repetitive Verification**:
  If case „Normal“ results in a **NO HIT**, LIVE-FP will be verified also against remaining fingers in stored record

- No relevant time difference has been measured
- Reduction of False Rejection because of placing the wrong hand / finger at the border
- Negative: Increased risk of False Acceptance

**Recommendation**: **Usage of Permutation**
Europe in „Biometrics Competition“

Central statistics enable abstract monitoring, for example:

- Monitoring of **FTE – Rate**
- Monitoring of **Error Rate**
  - „Wrong“ NIST file (type of transaction etc.)
  - Duplicates etc.
- Differences between MS

Possible Reasons

- During acquisition
  - Software Issues?
  - Training Issues?
- Problem of Threshold?
Biometric Evaluation Authority (BEA)  
BSI Technical Guideline - TR-03121

- Monitoring quality / support error analysis
- Evaluation-Server developed as Proof-of-Concept in VIS PILOT
- Creation of diagrams and statistics regarding biometric processes
  - enrolment, verification, identification
- Reading and evaluating biomiddle BSP logging data
- Useful information, that can only be collected during aquisition at client side!
Visit the Homepage of the

**Federal Office for Information Security**
Bundesamt für Sicherheit in der Informationstechnik - BSI

http://www.bsi.bund.de/technicalGuidelines
TR Biometrics: TR-03121 (Version 2.3)

- German Identity Card & German Electronic Passport
- Verification ePassport & Identity Card w. facial biometrics
- Application for Biometric Visa
- Basic and Extended Identity Check Biometric Visa
Thank you for your attention!

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