National Preparations towards the Operation of the
European Visa Information System

VISA-
INFORMATIONSSYSTEM
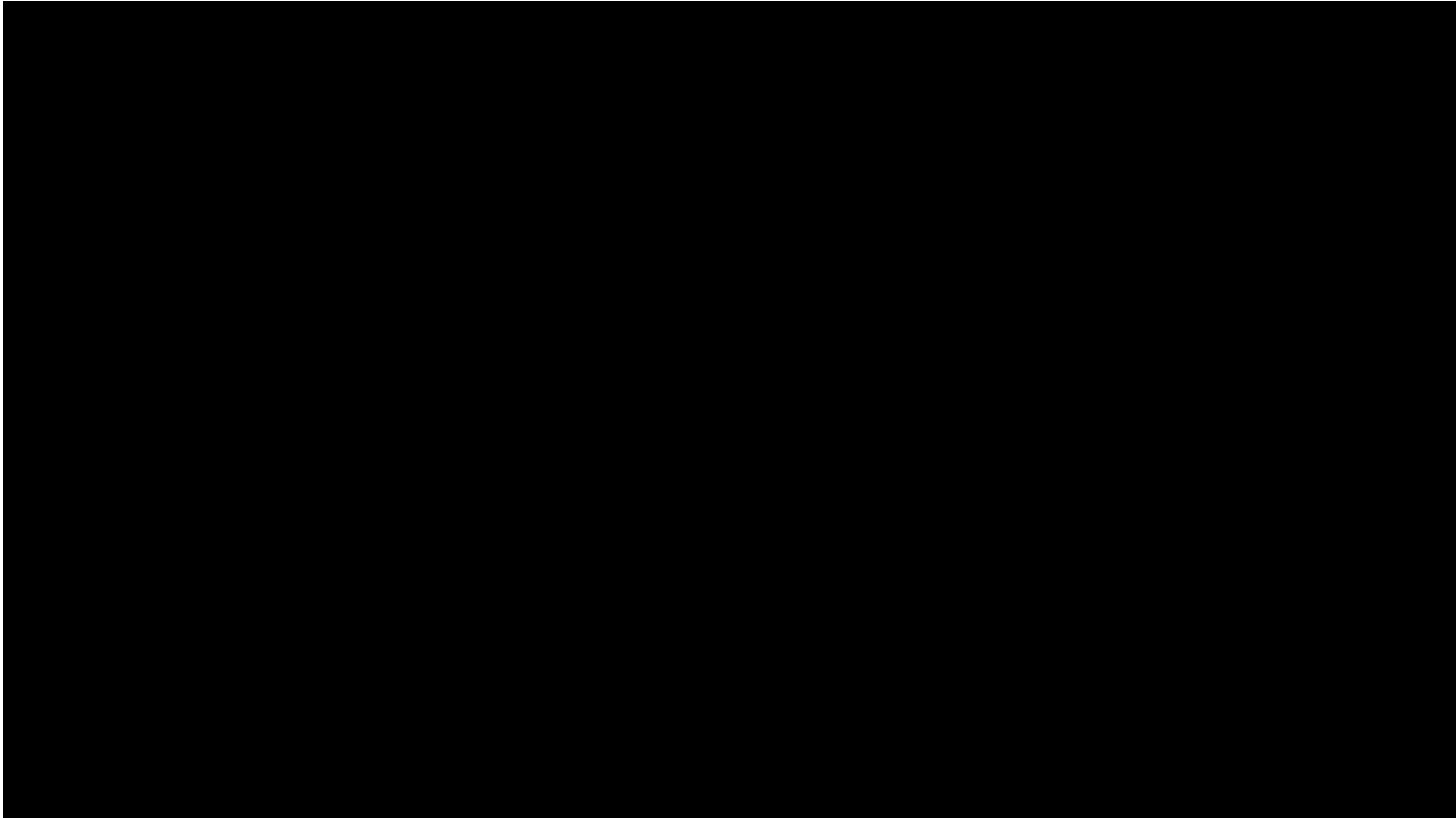(VIS)

IBPC 2012, NIST, Gaithersburg

06.03.2012, Fares Rahmun

Federal Foreign Office

• Visa Application

Start of Operation:

October 11th 2011

EU VIS

Federal Police

• Border Control
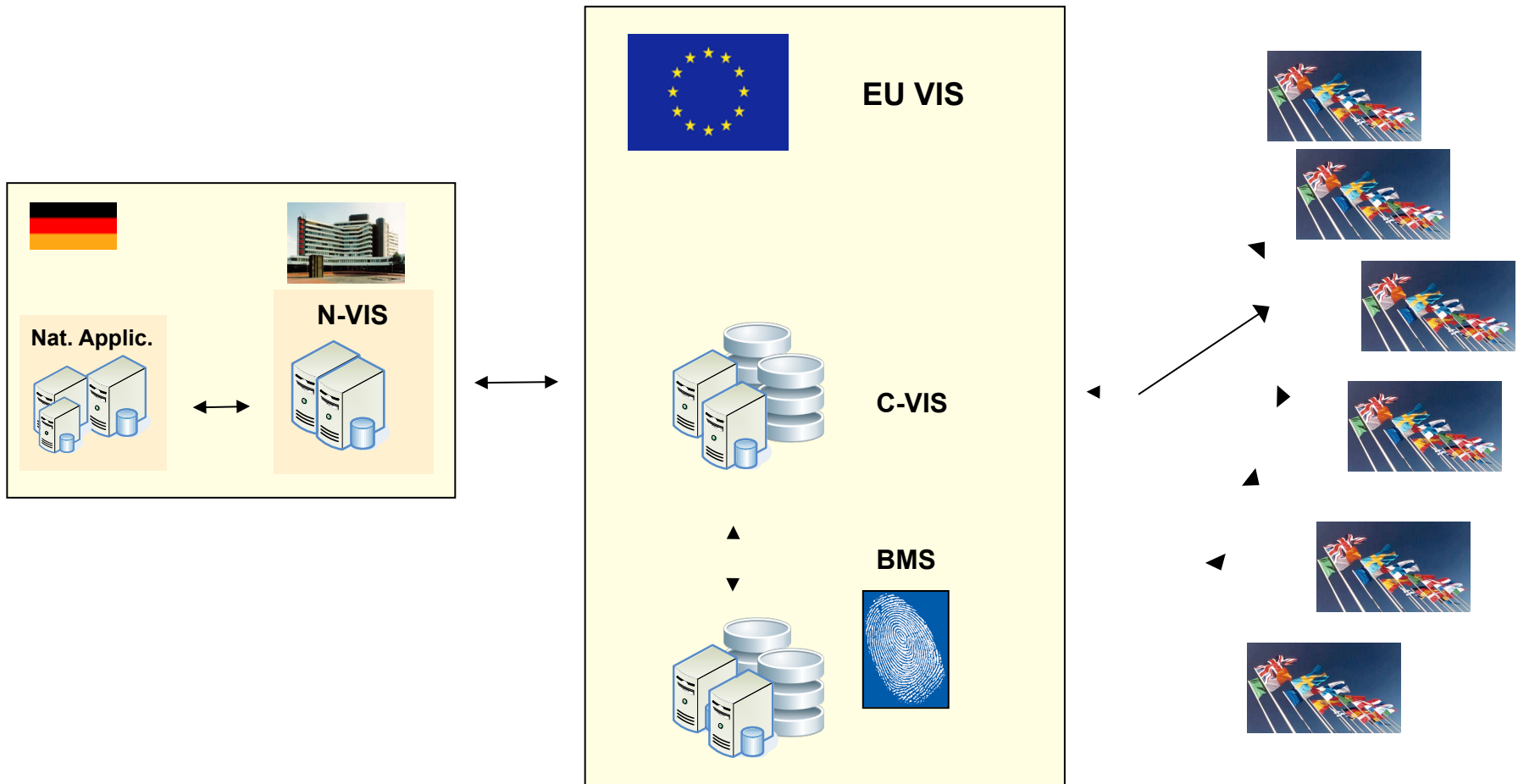
• Territory Control

• Border Visa

Federal Office of Administration (BVA)

- Searching
- Linking
- On basis of alphanumeric and fingerprint search
- Highly Automated
- Human operators
- supported by Facial Recognition

ABHn   **BAMF**   **Police**   **Secr. Service**

- **Search**
- **ID – Check**
- **Extension**
- **Shortening**
- **etc.**

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Federal Office
of Administration

EU VIS

Nat. Applic.

N-VIS

C-VIS

BMS

EU Registered
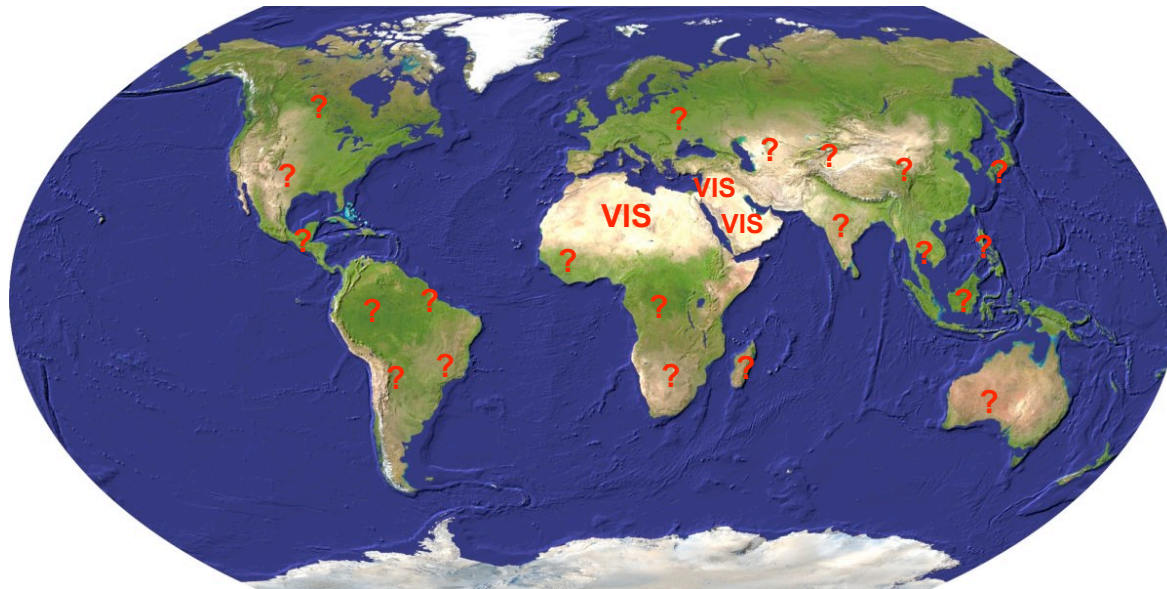Traveler 2

- **Regional Rollout** regarding **Enrolment** (2010/49/EG)
  - Region 1: „**North Africa**" – Egypt, Algeria, Lybia, Mauritania, Morocco, Tunisia → **October 11th 2011**
  - Region 2: „**Near East**" – Israel, Jordan, Lebanon, Syria → **May 5th 2012**
  - Region 3: „**Gulf Region**" – Afghanistan, Bahrain, Iran, Iraq, Yemen, Katar, Kuwait, Oman, Saudi Arabia, VAE → **October 2nd, 2012**

- **Schengen Border Code:**
  Regulation (EC) No 81/2009 amending Regulation (EC) No 562/2006 as regards the use of the VIS under the Schengen Borders 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
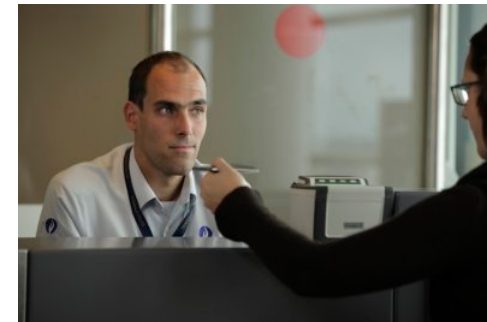
German Federal Police – Individual Implementation

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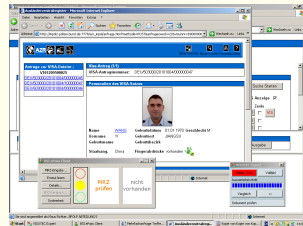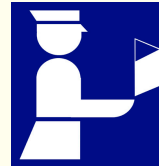
Border Control – Territory
• **Verification 1:1 (mainly – others possible)**

XML

XML

**Federal Office of
Administration (BVA)**

EU VIS

German Federal Police – BVA Implementation

Border Control – Secondary
• Verification 1:1, Search 1:n

Border – Visa Enrolment
• Enrolment, Linking, Search 1:n
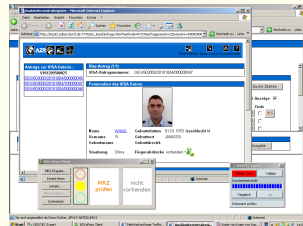
Federal Office of Administration (BVA)

EU VIS

■ **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**

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■ **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

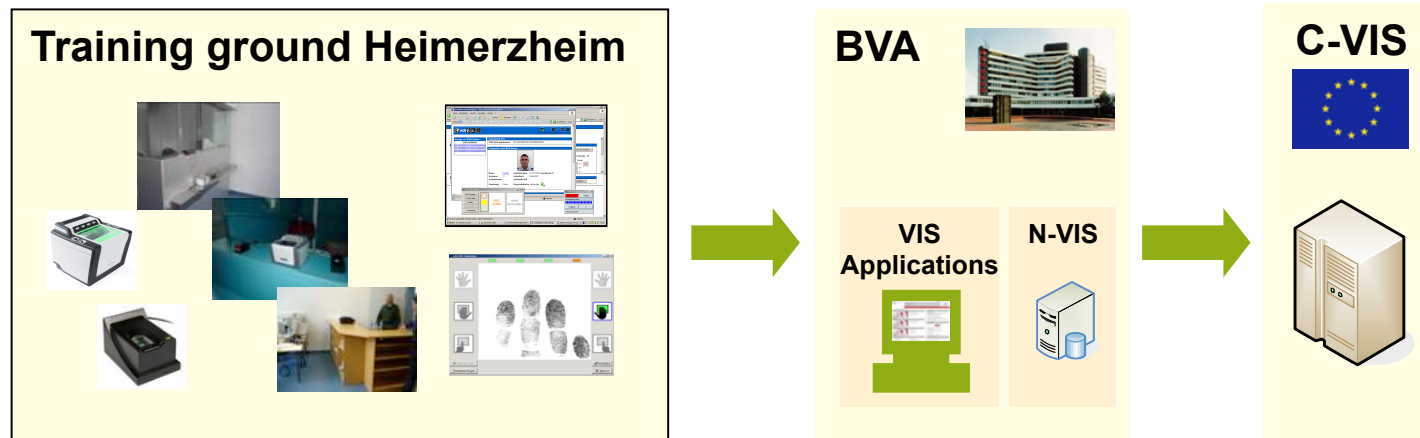**Training ground Heimerzheim**

BVA

C-VIS

VIS Applications

N-VIS

■ **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

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■ **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
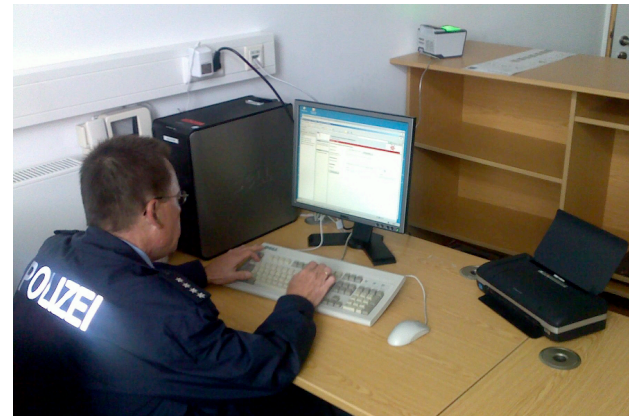 ■ ….

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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

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of Administration

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**
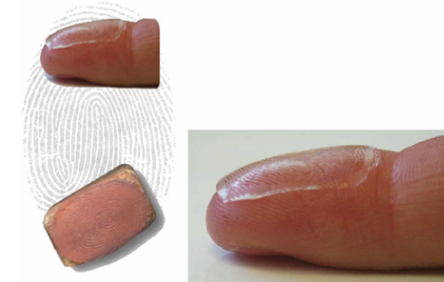
Training Material & Training Video for Border & Consulates including
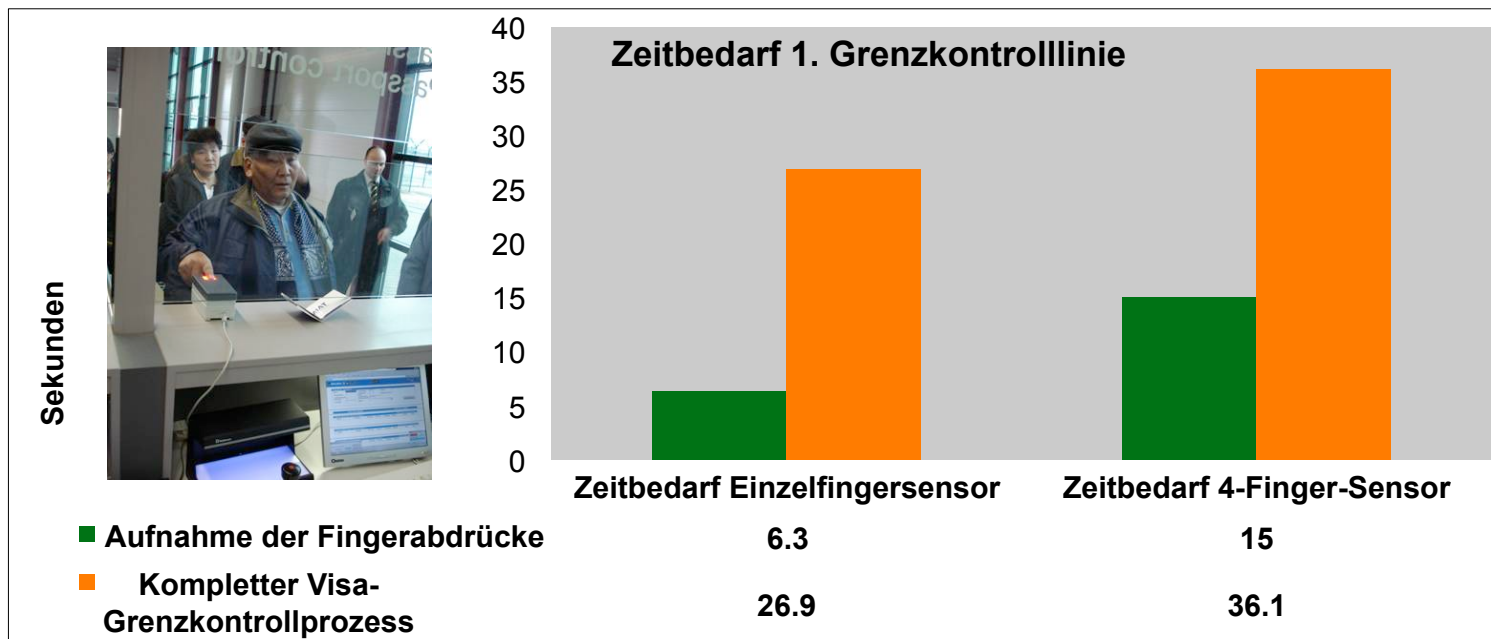
- **Legal Background**
- **Maintenance Instructions** (counter layout, calibration, cleaning etc.)
- **FAQ regarding biometrics** (quality assessment, tricks & tools etc.)
- **Process** (workflow, possible protection against fakes etc.)

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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" arrise

Zeitbedarf 1. Grenzkontrolllinie

Sekunden

	Zeitbedarf Einzelfingersensor	Zeitbedarf 4-Finger-Sensor
■ Aufnahme der Fingerabdrücke	6.3	15
■ Kompletter Visa-Grenzkontrollprozess	26.9	36.1

Permutation (2.203 Repetitive Verification Flag) :

- **Normal**: Matching of Live-FP with the exact reference in stored record (e.g. left index finger ←→ 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**

MS	OK	NOK	FTE	ERR	% ERR
AT					
BE					
CZ					
DK					
EE					
FI					
FR					
DE					
EL					
HU					
IS					
IT					
LV					
LT					
MT					
NL					
NO					
PL					
PT					
SL					
SI					
ES					
SE					
CH					
Total					

- **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 aquisition
    - 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 diagramms and statistics
  regarding biometric processes
  - enrolment, verification, identifikation
- Reading and evaluating biomiddle BSP
  logging data
- Useful information, that can only be
  collected during aquisition at client side!
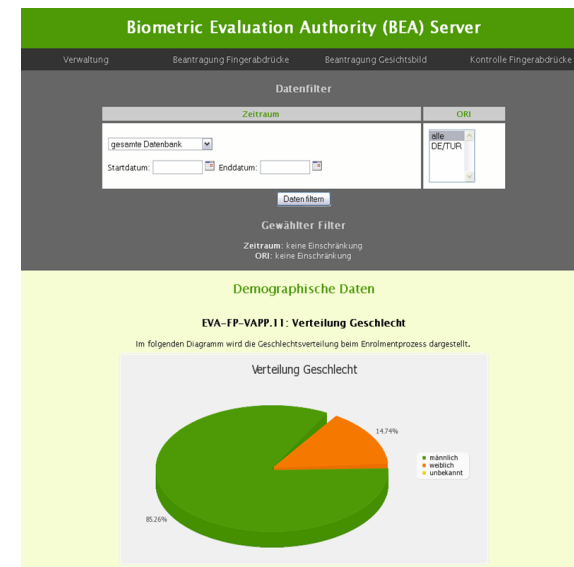
Federal Office
of Administration

- 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

Bundesamt
für Sicherheit in der
Informationstechnik

Bundesverwaltungsamt
Der zentrale Dienstleister des Bundes

Thank you for your attention!

Federal Office of Administration (BVA)
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