

Automated Border Control – state of play and latest developments

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Outline

- History of EasyPASS
- EasyPASS 2nd generation
 - State of play
 - BSI Technical Guidelines applied to EasyPASS
 - EasyPASS biometric workflow
- ABC in Europe
 - Current installations
 - Frontex ABC guidelines

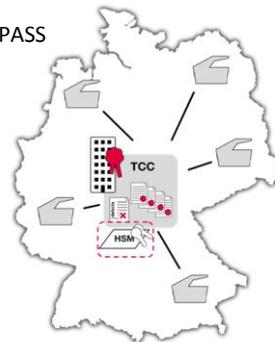
EasyPASS at a glance

- EasyPASS := German Automated Border Control (ABC) system
- eGate setting := Integrated 2-Step
 - Step 1: document authentication
 - Step 2: biometric face comparison
- Each physical installation is composed of
 - a group of up to six self-service eGates
 - one monitoring station - monitoring (and if necessary interaction) by a border police officer
- Open for citizens of EU/EEA/CH (18+ years old) for crossing the Schengen border at German ports (so far airports only)
- Supported documents
 - Electronic passports
 - German electronic ID cards

EasyPASS history (2009 – 2013)



- 2009 – 2010: EasyPASS initial pilot project
 - Group of four eGates and one monitoring station at Frankfurt airport
 - Focus on system/process design and biometrics
- 2011: EasyPASS PLUS (2nd pilot phase)
 - Support for the German electronic ID card in EasyPASS
 - Development and implementation of the background infrastructure (EAC-PKI)
 - Terminal Control Centre (TCC)
 - Management of certificates and keys
 - Authentication of connected terminals
 - ICAO-PKI: TCC for Passive Authentication (PA)
 - Central storage of trusted CSCA certificates
 - Centralized checking of DS certificates
 - EAC-PKI: TCC as centralized IS for many terminals



EasyPASS history (2009 – 2013)

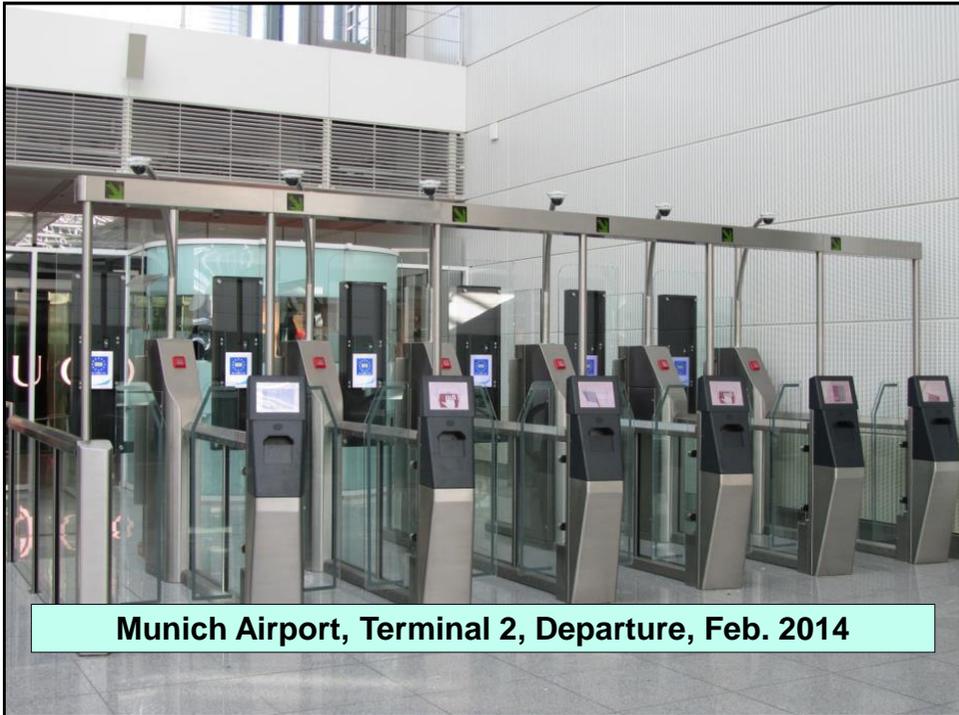


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 - Development and implementation of the background infrastructure (EAC-PKI)
 - Terminal Control Centre (TCC)
- 2012: Cost benefit analysis and preparation of requirements set
- Q1 – Q2 2013: Tender
- July 2013: Contract for delivery of “EasyPASS 2nd generation” awarded to the consortium Bundesdruckerei GmbH/secunet Security Networks AG

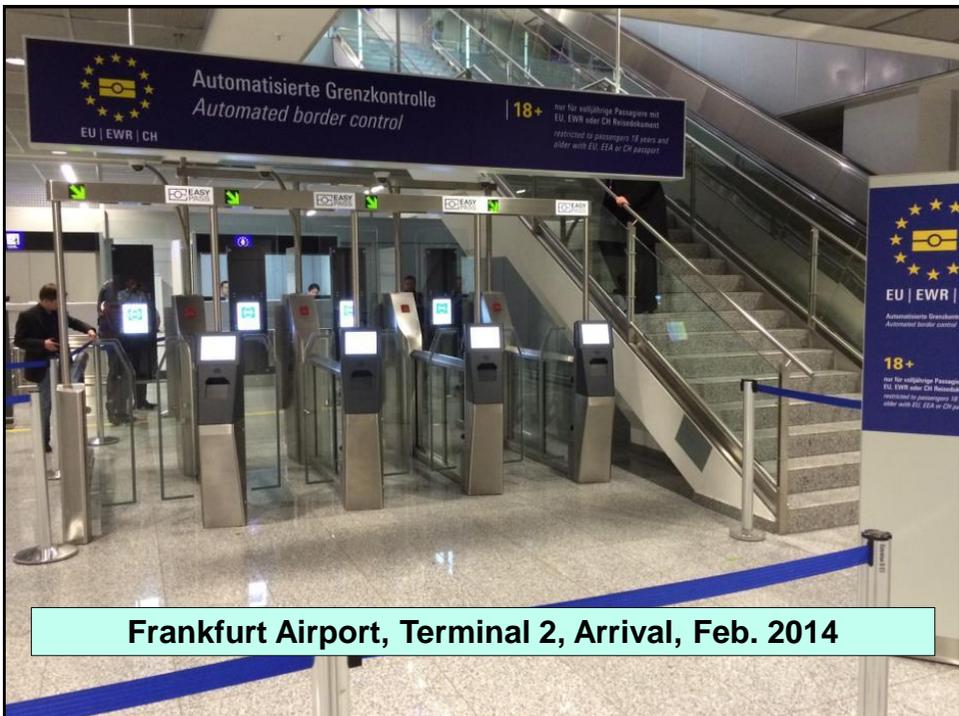
EasyPASS 2014+



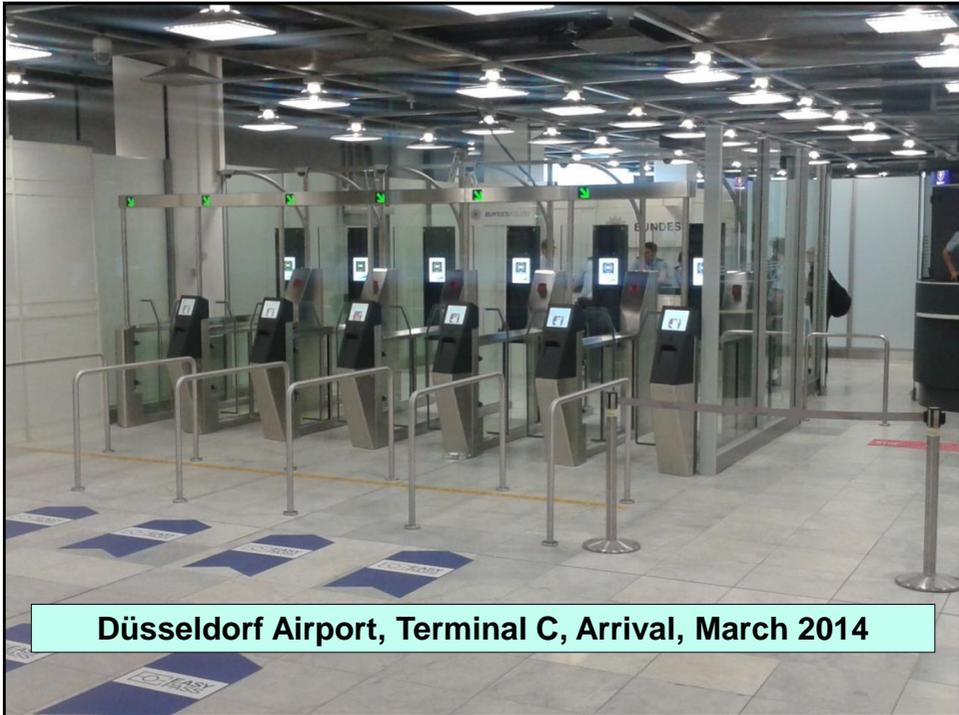
- Feb./March 2014: First systems installed at four airports and start of “testing and calibration period”
 - 23 eGates at four border control lines in FRA, MUC, DUS and HAM
- April/May 2014: Further systems installed in Frankfurt and Düsseldorf
 - 14 eGates at three border control lines in FRA and DUS
- 13 June 2014: Official opening ceremony by state secretary from Federal Ministry of the Interior
 - End of “testing and calibration period”
- Future
 - Q3/2014: 16 eGates at three border control lines in FRA, MUC and HAM
 - Q4/2014: 26 eGates at four border control lines in FRA and DUS
 - 2015+: EasyPASS at further airports (especially new Berlin airport (BER))



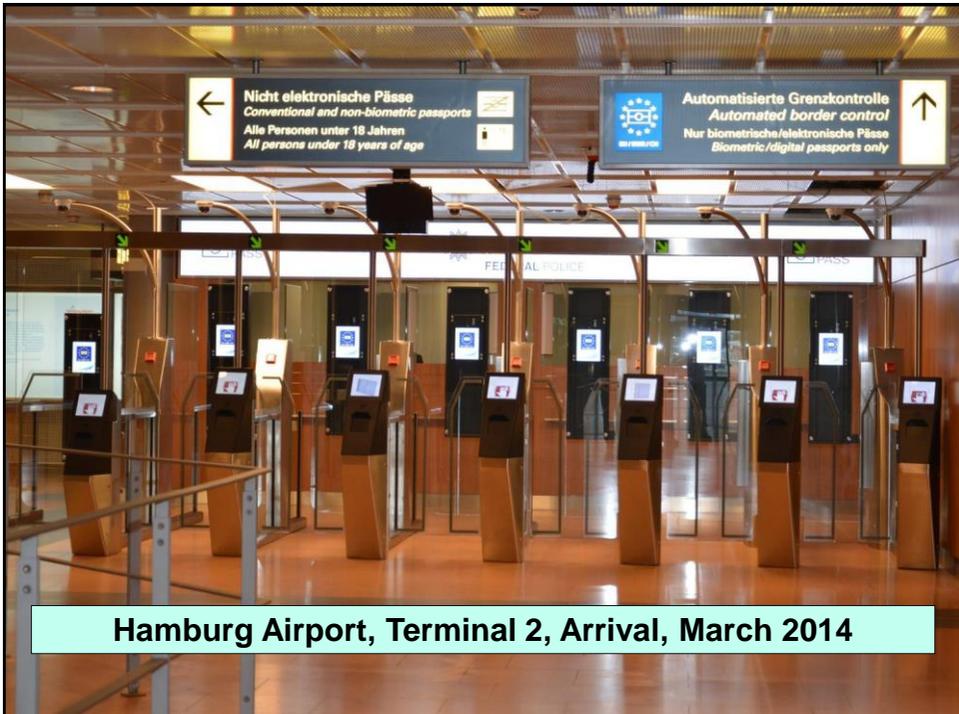
Munich Airport, Terminal 2, Departure, Feb. 2014



Frankfurt Airport, Terminal 2, Arrival, Feb. 2014



Düsseldorf Airport, Terminal C, Arrival, March 2014



Hamburg Airport, Terminal 2, Arrival, March 2014

EasyPASS 2nd generation – general physical design



- Integrated 2-Step topology
 - Physical design comprising entry and exit door
 - Document reader in front of entry door
 - Biometric face capture unit mounted in exit door
- Servo-controlled, maintenance free door drives
- Stainless steel and tempered glass
- Side by side assembling into group of eGates
 - Typically four to six eGates per group



EasyPASS 2nd generation – entry kiosk

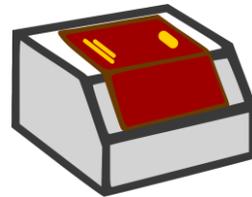


- First point of contact with the system by the traveler
 - Easy of use and ergonomics are key features for user acceptance
- Hardware
 - Document reader: VISOTEC Expert 600 OEM
 - Proven device which is in operation in manual border control as well
 - Guidance and feedback screen
 - Innovative user feedback incl. live stream from the optical reader
- Software
 - Bundesdruckerei VISOCORE
 - secunet BioMiddle and ePassportAPI
- Requirements regarding document reading and document authentication according to BSI Technical Guideline (TR-03135)



BSI Technical Guideline (TR-03135) – computer aided eMRTD checks

- BSI TR-03135 := „Maschinell gestützte Dokumentenprüfung in hoheitlichen Kontrollinfrastrukturen“
 - So far in German language only
 - English version in Q3/2014
- Version 1.2 available via BSI website: <https://www.bsi.de>
- Builds on and extends the requirements for document authentication as defined in the FRONTEX “Best Practice Technical Guidelines for ABC Systems”
 - Physical/optical document checks
 - Electronic checks
 - Good practice environment
 - XML logging scheme



EasyPASS 2nd generation – biometric capture unit

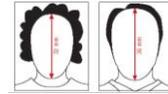


- Panel mounted into exit door
 - In direct walking direction of the traveler
- Guidance and live video feedback screen (digital mirror)
- Integrated lighting
 - Ensures high quality, properly illuminated images
- Automatic height adjustment
 - Movement of the entire capture unit (sensors, screen and lighting)
 - Full frontal images of persons from 120cm up to 220cm
- Requirements regarding biometrics according to BSI Technical Guideline (TR-03121)

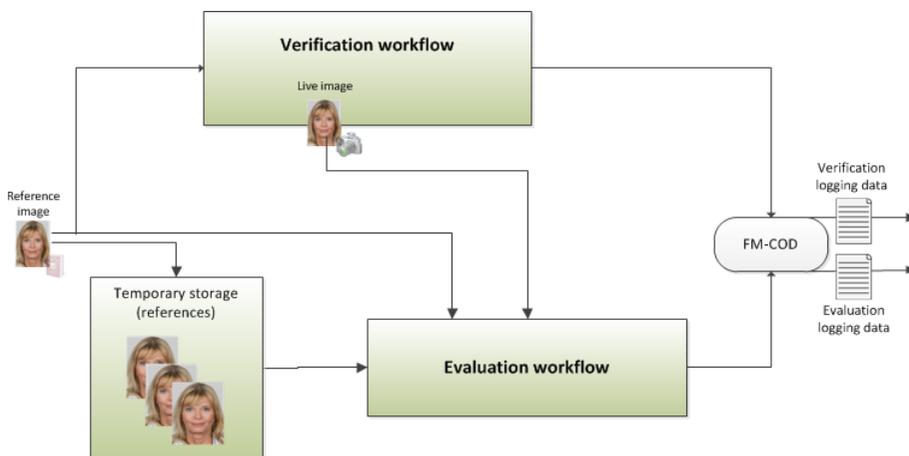


BSI Technical Guideline (TR-03121) – Biometrics in Public Sector Applications

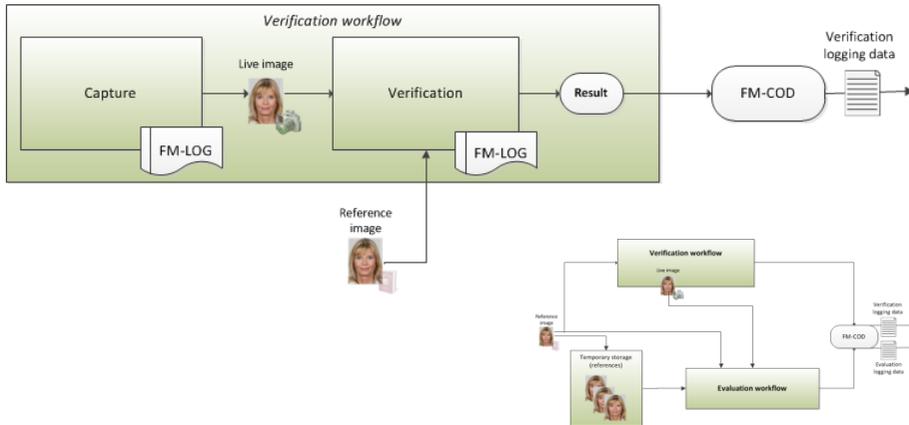
- BSI TR-03121
 - Part 1: Framework
 - Part 2: Software Architecture
 - Part 3: Application Profiles and Function Modules
- Version 3.0 available via BSI website
- Enrolment, identification and verification profiles
 - EasyPASS Application Profile:
“Verification ePassport and ID card using facial biometrics”
 - EasyPASS biometric workflow specified as Function Module composed of
 - Verification workflow
 - Evaluation workflow
 - XML logging scheme



BSI Technical Guideline (TR-03121) – EasyPASS biometric workflow



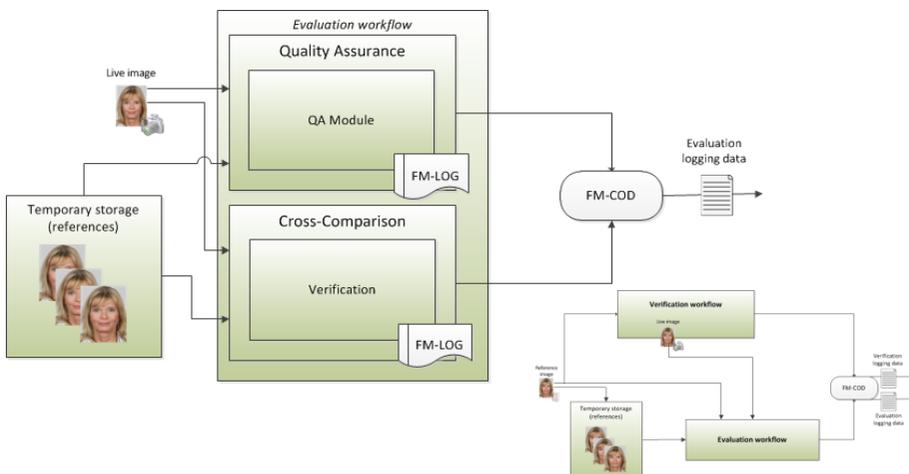
BSI Technical Guideline (TR-03121) – verification workflow



Markus Nuppeney, BSI

ICAO Regional Seminar on MRTDs, Madrid, 26 June 2014

BSI Technical Guideline (TR-03121) – evaluation workflow



Markus Nuppeney, BSI

ICAO Regional Seminar on MRTDs, Madrid, 26 June 2014

EasyPASS 2nd generation - figures and experiences



- About 500.000 transactions since March 2014
- About 16 sec. processing time per traveler (in the case of accept)
- “Testing and calibration period” finished before schedule
 - Only four months for testing and calibration (Feb. - May 2014)
- Still room for improvement regarding Operational Reject Rate (ORR)
 - Targeted ORR <10%
 - 1st goal: Achieve fraction to ORR from biometrics <5%
 - @ a defined biometric security level (FAR <= 0,1%)
 - 2nd goal: Achieve fraction to ORR from watch list and document checks <5%
 - Electronic document checks are very reliable (reject rate <0,1%)
 - Availability of trusted and up-to-date certificates (CSCA MasterList) is the biggest challenge regarding electronic document checks
 - 3rd goal: Optimize user guidance to avoid rejects due to travelers behavior

ABC installations in Europe



- 13 European countries have ABC in operation
 - PT, UK, FI, FR, DE, ES, CZ, NL, BG, NO, AT, IE, EE
 - Total number of eGates: ≈ 320
 - Total throughput in 2013: ≈ 15 million
- Target group: EU/EEA/CH citizens
 - Extension to selected Third Country Nationals (TCNs) in FI, UK and DE
- Token: ePassport
 - In addition national ID cards in case of DE, PT and ES
- Biometric modality: primarily face
 - ES and EE: face and fingerprint
 - FR: fingerprint only

- Frontex ABC Working Group
 - WG was started in 02/2010 by NL, UK, FI, ES, PT, FR and DE
 - WG expanded in 2013 by CZ, IE, BG and Hongkong
 - Most recent documents
 - Best Practice Technical Guidelines for ABC Systems, v2.0, 08/2012
 - Best Practice Operational Guidelines for ABC Systems, v2.0, 08/2012
 - Both available via <http://frontex.europa.eu/publications/>
 - Current and future work
 - Updates of the existing guidelines expected for Q3/2014
 - New guideline document under preparation regarding ABC systems for Third Country Nationals (TCN)

Thank you!

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