



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



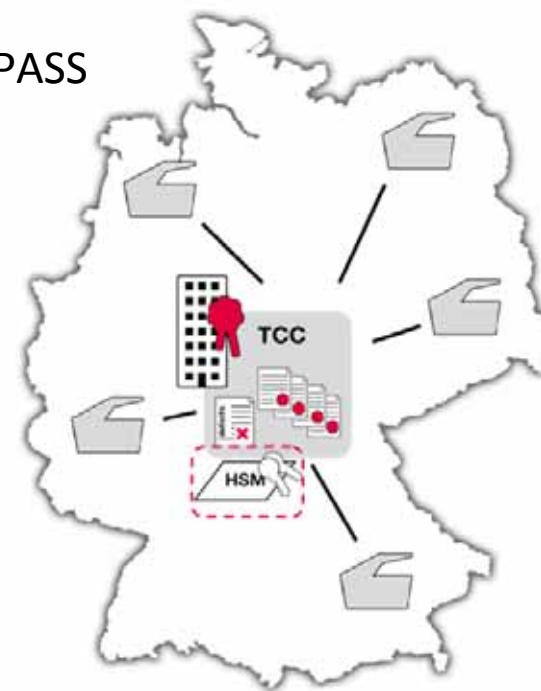
- EasyPASS := German Automated Border Control (ABC) system
- eGate setting := Integrated 2-Step
 - Step 1: document authentication
 - Step 2: biometric face comparison
- Each physical installation is composed of
 - a group of up to six self-service eGates
 - one monitoring station - monitoring (and if 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 card

EasyPASS history (2009 – 2013)



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- 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



EasyPASS history (2009 – 2013)



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 - Support for the German electronic ID card in EasyPASS
 - 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+



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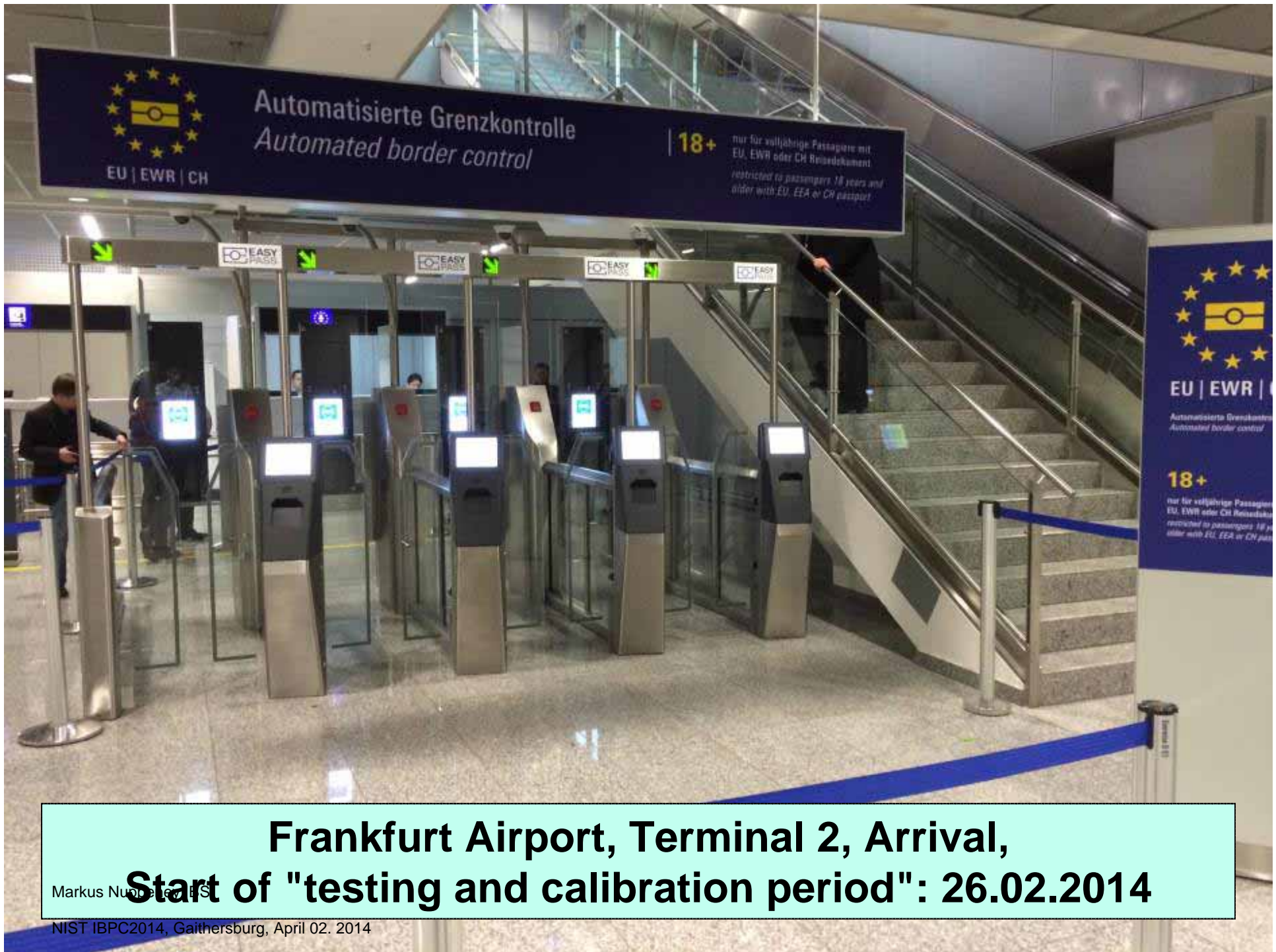
- Feb. 2014: First systems installed in Frankfurt and Munich and start of “testing and calibration period”
 - 10 eGates at two border control lines in FRA and MUC
- March 2014: First systems installed in Düsseldorf and Hamburg
 - 13 eGates at two border control lines in DUS and HAM
- Future
 - Q2/2014: 22 eGates at four border control lines in FRA, MUC and DUS
 - Q3/2014: 8 eGates at two border control lines in FRA 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, Start of "testing and calibration period": 21.02.2014

Markus Nuppeney, BSI

NIST IBPC2014, Gaithersburg, April 02. 2014

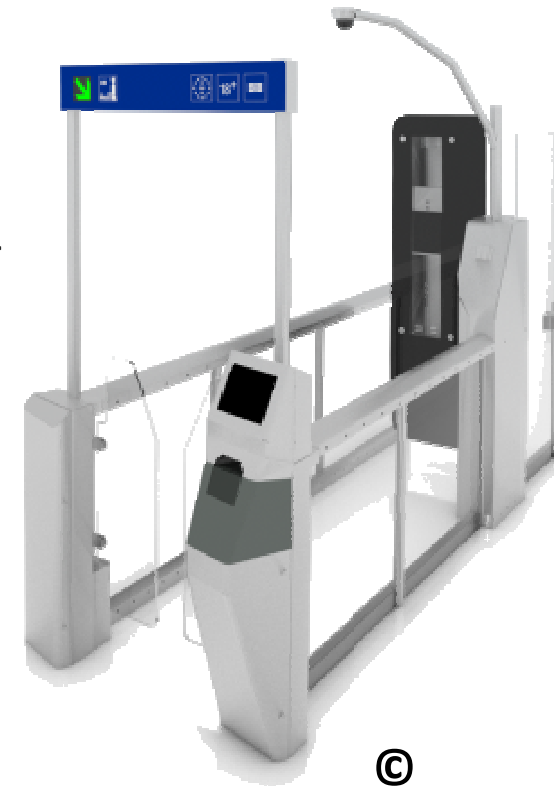


EasyPASS 2nd generation – general physical design



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- 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



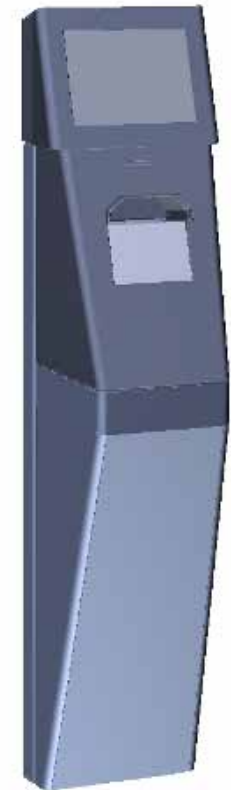
secunet[©]

EasyPASS 2nd generation – entry kiosk



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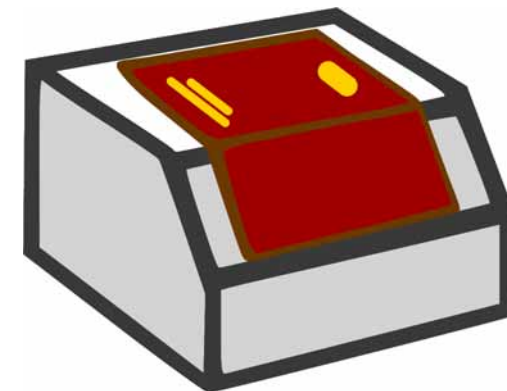
- First point of contact with the system by the traveler
 - Easy of use and ergonomics are key features for user acceptance
- Hardware
 - Document reader: VISOTEC Expert 600 OEM
 - Proven device which is in operation in manual border control as well
 - Guidance and feedback screen
 - Innovative user 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



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- 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

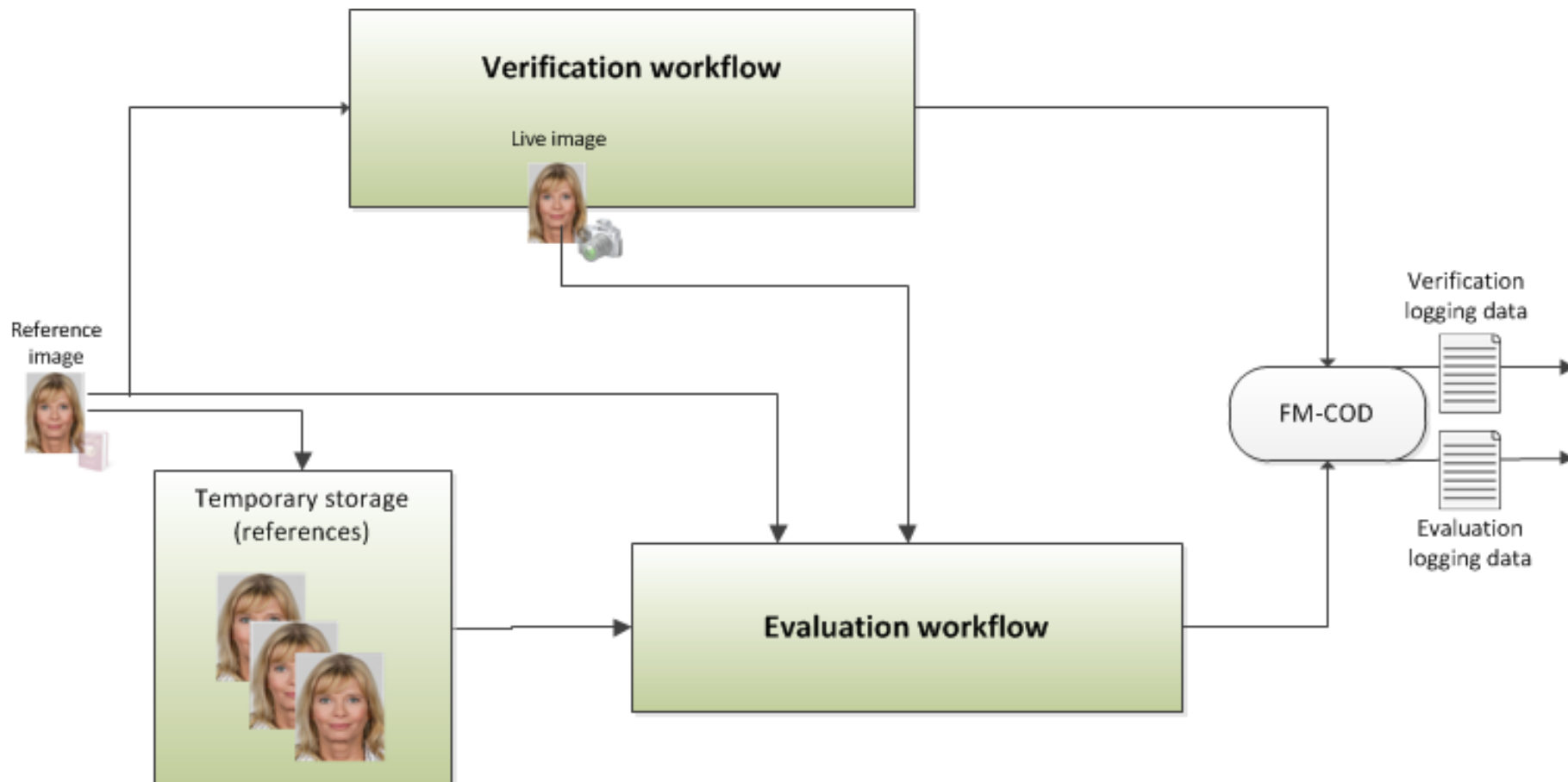


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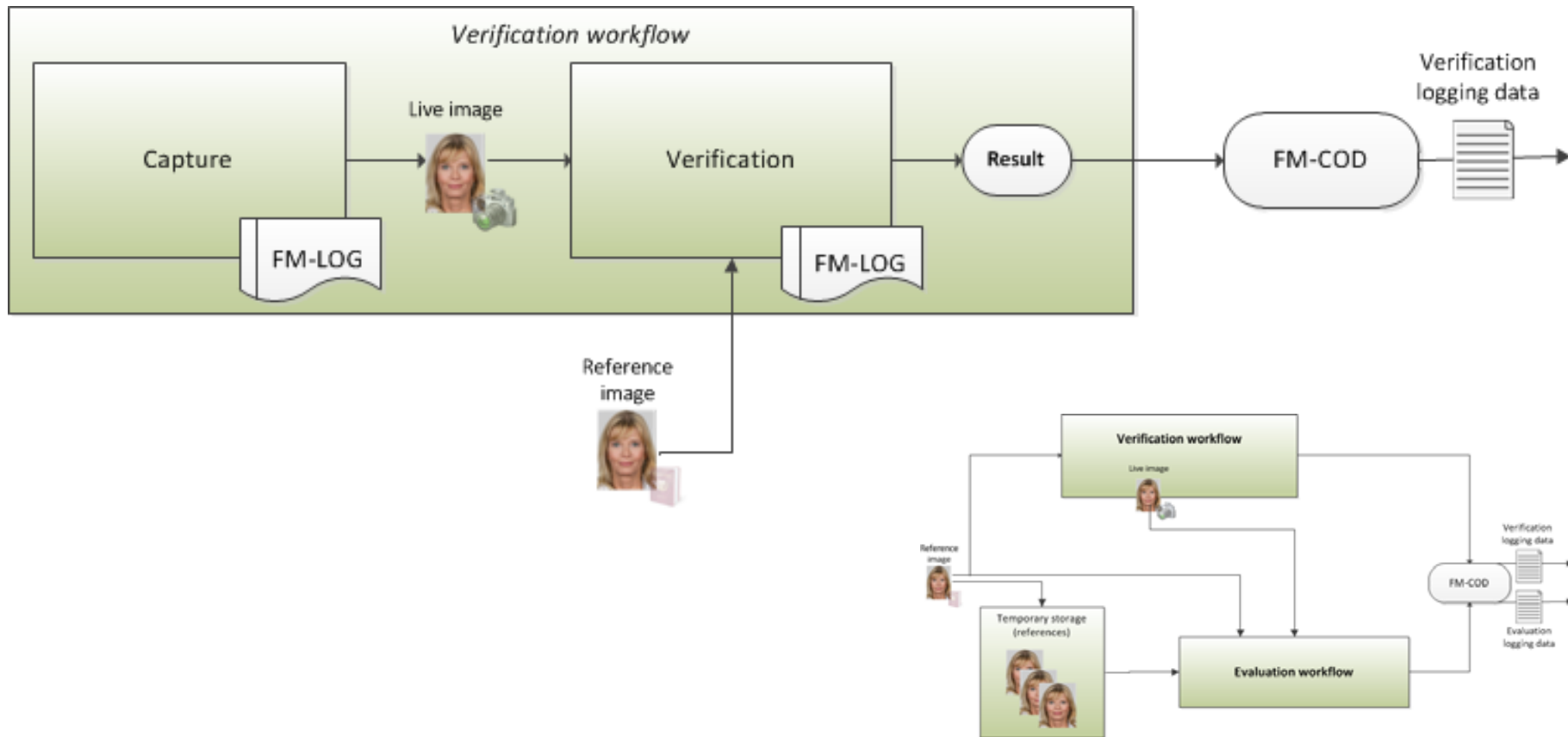
- BSI TR-03121
 - Part 1: Framework
 - Part 2: Software Architecture
 - Part 3: Application Profiles and Function Modules
- Version 3.0 available via BSI website
- Enrolment, identification and verification profiles
 - EasyPASS Application Profile:
“Verification ePassport and ID card using facial biometrics”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



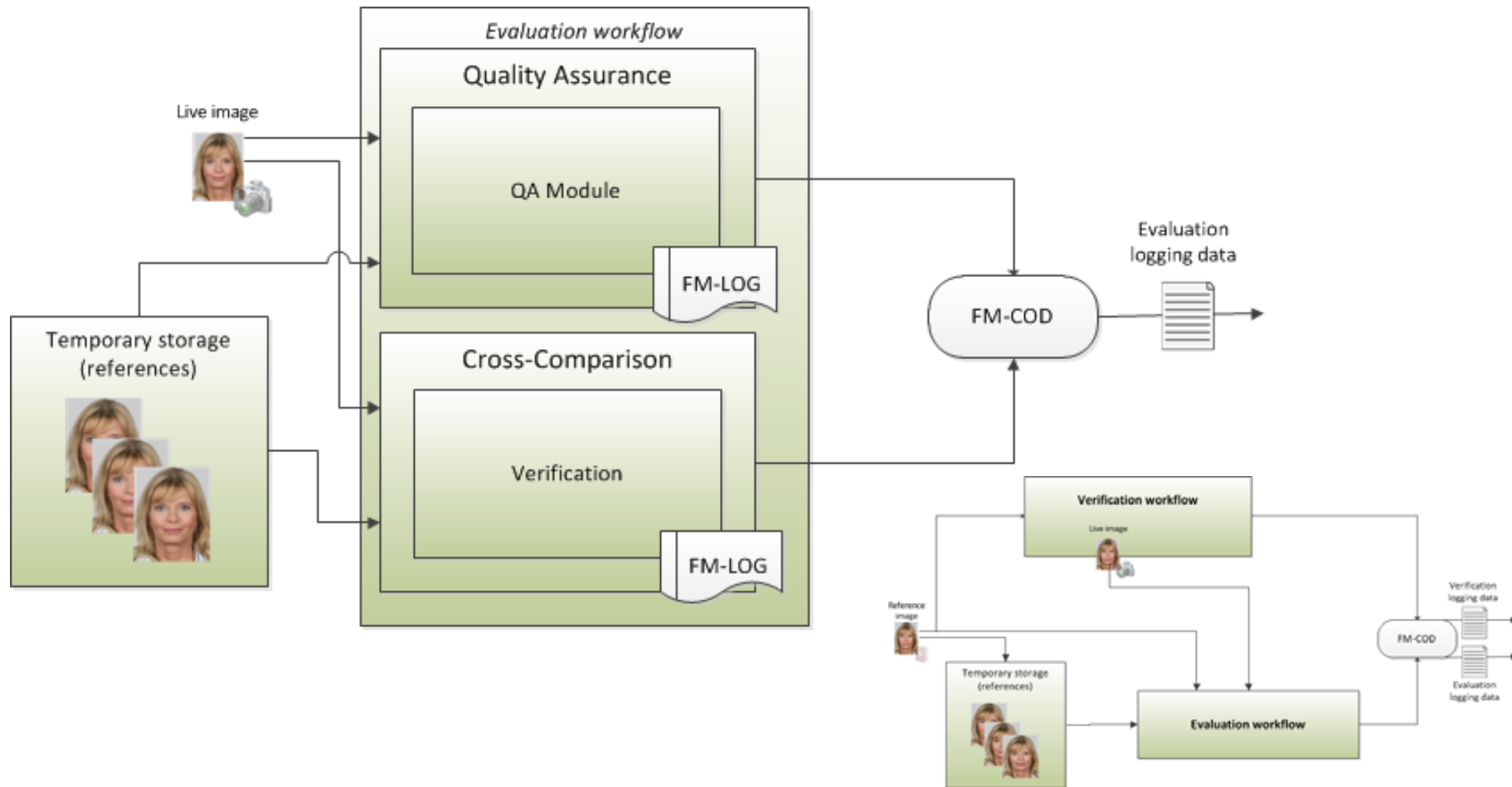
BSI Technical Guideline (TR-03121) – EasyPASS biometric workflow



BSI Technical Guideline (TR-03121) – verification workflow



BSI Technical Guideline (TR-03121) – evaluation workflow



EasyPASS 2nd generation - figures and experiences



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- Over 60.000 transactions during March 2014
- About 16 sec. processing time per traveler (in the case of accept)
- Federal police is in general satisfied with the systems being in place, but the Operational Reject Rate (ORR) is still too high
 - 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 place since
 - 2007-2009: PT, UK, FI, FR
 - 2010-2011: DE, ES, CZ, NL
 - 2012-2013: BG, NO, AT, IE, EE
- Systems can be used by EU/EEA/CH citizens
 - Third country nationals from JPN and KOR processed in addition by FI
- ePassport as token supported by all systems
 - National ID card in addition supported by DE and ES
- Almost every system supports facial biometrics
 - ES and EE are doing multimodal biometrics (face and fingerprint; Spanish ID card supports fingerprint match-on-card)
 - FR is doing 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 summer 2014
 - New guideline document under preparation regarding ABC systems for Third Country Nationals (TCN)

Thank you!



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