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R e s e a r c h C o n s u l t i n g I n t e g r a t i o n

Biometric Passports and Identity Management in EU Nations

Biometrics Consortium Conference

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Agenda

- Machine Readable Travel Documents
 - E-Passports and Schengen Visas
 - Documents
 - Enrollment processes
 - European Citizen Card
- EU Information Systems
- Operational Scenarios
 - Consular Operations
 - Border Control
- Conclusions

E-Passport Guidelines

- Council Regulation (EC) No 2252/2004
 - Specifies ICAO 9303 as the Technical Specification
- ICAO 9309 defines requirements for Machine Readable Travel Documents (MRTDs)
 - Part 1 – Machine Readable Passports
 - Part 2 – Machine Readable Visas
 - Part 3 – Size-1 and Size-2 MRTDs
- US Visa Waiver Program
 - Provides guidelines for passport issuance,
 - Case-by-case evaluation by Department of Homeland Security
 - Requires BAC passports as a minimum

EU MRTDs: Physical Documents

- E-Passport: Physical Document

- Biometrics are encoded in a chip in the document,
- Chip is accessed by a ISO 14443 contactless interface
- A Sleeve or Cover prevents transmission, reducing sniffing
- Secured by:
 - Basic Access Control (Initially)
 - **Key to data is printed on e-Passport**
 - **Prevents sniffing from decrypting data**
 - **Includes printed data and the electronic photograph**
 - Extended Access Control (EU as of June 2009)
 - **E-Passport authenticates itself to passport station**
 - **Passport station authenticates itself to e-Passport, using certificate chain whose root is the passport issuer itself**
 - **Includes printed data, electronic photograph, and fingerprints.**

- Schengen Visa Physical Document Considerations

- Sticker affixed in passport
- Biometrics stored centrally in C-VIS
- Traveler identified by number on sticker

EU MRTDs: Enrollment

- E-Passport Enrollment Requirements

- US Visa Waiver Program

- Security of application, production and delivery processes;
 - Security of passports and incidence of fraud or misuse

- ICAO 9303

- Compliant photographs require either:
 - **On-site photographing at enrollment centers**
 - **Proper use of image quality software at off-site photographers**
 - Fingerprint capture requires single finger fingerprint sensors

- Schengen Visa Enrollment Considerations

- Ten Flat Fingerprints for duplicate check, and later verification
 - Electronic Photograph for later verification

EU MRTDs: European Citizen's Card

- For E-Government
 - Defined by CEN/TS 15480
 - Match on Card as an alternative VERIFY function
 - Fingerprint Templates

- As a Machine Readable Travel Document
 - CEN/TS 15480 refers to ICAO 9303
 - Store on Card
 - Fingerprint Images
 - Secured by Country's PKI
 - Required for Residence Permit

EU Information Systems

- Schengen Information System
 - Accessible by all Schengen member states
 - Centralized watch list for:
 - Missing Documents
 - Stolen Items
 - Missing/Wanted Persons
 - Watchlist checked at EU immigration on entry and exit
 - Czech Police report that since 9/2007 they have found:
 - 900 Wanted Persons
 - 400 Missing Persons
 - 1000 Stolen Cars
 - 1800 Lost Documents
- Visa Information System
 - Supports the Schengen Visa
 - C-VIS is the centralized interface to check visas

EU Information Systems, cont.

- EU-BMS

- Provides large-scale biometric verification and identification
- Supporting C-VIS (piloting)
 - 1-to-n duplicate detection on applicants.
 - 1-to-1 verification at border
- Supporting SIS II (future)
 - 1-to-n watchlist
- No direct interface to EU-BMS for member states

- Local Police Watchlists

- Persons of Interest
- Do not meet qualifications for inclusion in SIS

EU Consular Operations

- e-Passport applications
 - For Citizens
 - 1 ICAO compliant face image
 - 2 ICAO compliant flat fingerprint images
 - Possibly 10 if an AFIS duplicate check is used
- Schengen Visa applications
 - For non-visa waiver foreign nationals
 - 1 ICAO compliant face image
 - 10 flat fingerprint images for VIS duplicate check and verification
- Equipment
 - A 4-finger scanner can be used for both enrolments
 - Two enrollment applications accessing the same scanner, or
 - Custom enrollment software covering both visas and passports
 - Consular staff may be physically separated from enrollees.

EU Consular Operations, cont.

- Interfaces
 - VIS for Schengen Visa enrolments
 - Central Passport Office
 - If Central Office does not handle all further workflow, SIS and local watchlist as appropriate
- Data must be securely transmitted internationally
- Biometric Data should not be stored locally
- Workflow may differ from centralized operations due to
 - Physical space available
 - Security concerns

Border Control

- Schengen Origin
 - No mandatory border control
 - Some Border Control stations may be in place for spot checks
- Non-Schengen Origin
 - Citizens and Residents
 - Document Authentication
 - Visa-Waiver Nationals
 - Document Authentication
 - SIS Check
 - Expanding to include Balkans:
 - **Serbia, Montenegro, and Macedonia approved for 2010**
 - **Bosnia and Albania to be re-reviewed in 2010**
 - 3rd-Country Nationals
 - Document Authentication
 - SIS Check
 - Biometric VIS Check

Border Control, cont.

- Interfaces

- SIS/SIS II

- Provides name-based watchlist
 - SIS II allows for download of biometrics for verification

- C-VIS

- Provides id number based lookup
 - Enrollees have already passed duplicate check
 - Provides biometric verification

- National Stoplist

- Country specific
 - May be textual, biometric, or both
 - May include individuals who do not qualify for upload to SIS
 - Prum Treaty

Conclusions

- Consulate and Embassy operations encourage a common e-Passport and Visa enrollment system
- BAC passports and security of the Both the Process and Documents should be sufficiently secure to pass US Visa Waiver Program evaluation
- Border Control stations must handle a wide range of functions in a single GUI-based application
- Border Control stations must gracefully handle VIS and SIS interfaces, along with biometric collection for VIS and e-Passport verification

Conclusions, cont.

- Border Requirement for EAC not expected until 2015;
 - Border Control operations will evolve over several iterations
 - A fully functional system should be in place initially, but issues may arise as BAC, EAC, and Schengen Visa checks go live
 - By 2015, non-EU countries (e.g. Singapore) will want access
 - Diplomatic and technical agreements between all issuing countries will continue to expand

- Wherever possible, common hardware should be used for all biometric processes
 - At the Passport Office, for both enrollment and pickup verification
 - At Border Control, for both Passport and Visa verification
 - At Consulates and Embassies, for both Passport and Visa enrolments

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