



INTERNATIONAL CIVIL AVIATION ORGANIZATION



الهيئة العامة للطيران المدني
CIVIL AVIATION AUTHORITY

ICAO Regional Seminar on MRTDs, Biometrics and Border Security

دوندوة الايكاو الإقليمية عن وثائق السفر المقروءة آلياً، والأدوات البيومترية وأمن الحدود

الدوحة، قطر



31 October - 2 November 2011, Doha, Qatar

٣١ أكتوبر إلى ٢ نوفمبر ٢٠١١



TESTING OF MRTD PRODUCTS

STATE OF PLAY

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Agenda



- Why is testing of eMRP necessary?
- What needs to be tested?
- Which specifications are applicable?
- How to run a professional test scheme?
- Where are governmental test schemes available?
- ICAO activities on developing a Doc 9303 Compliance Regime

Why is testing of eMRP necessary?



- As with every major investment product we plan to buy, we want to be sure that
 - ▣ It works as expected (Functionality incl. Interoperability)
 - ▣ It is secured against attacks (Security)
 - ▣ It sustains its quality for a long time (Durability)

What needs to be tested?



	Functionality	Security	Durability
Processes			
Systems			
E-passport			

What needs to be tested?

Test standards by international organizations



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What needs to be tested?

Business process must be efficient and secure

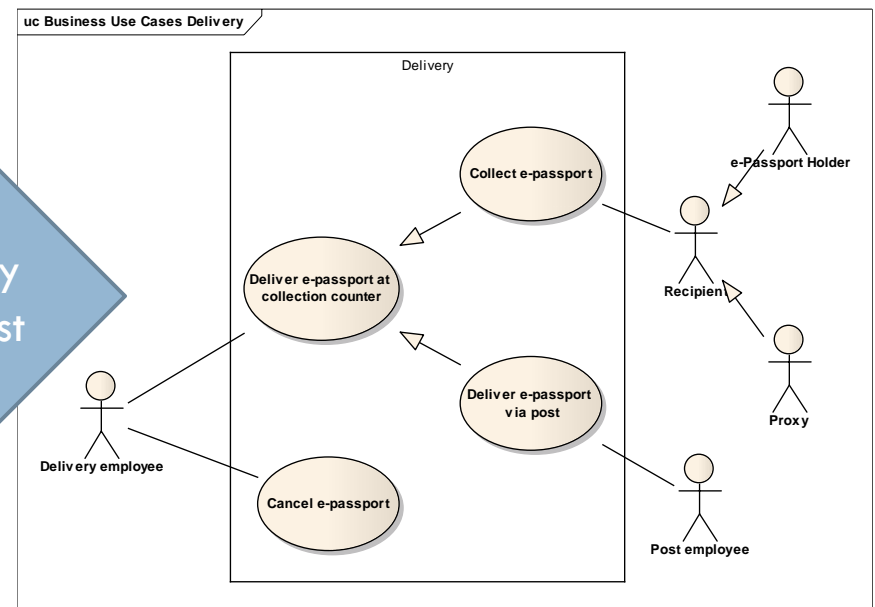
Functionality

Security

Processes



Specify
and test



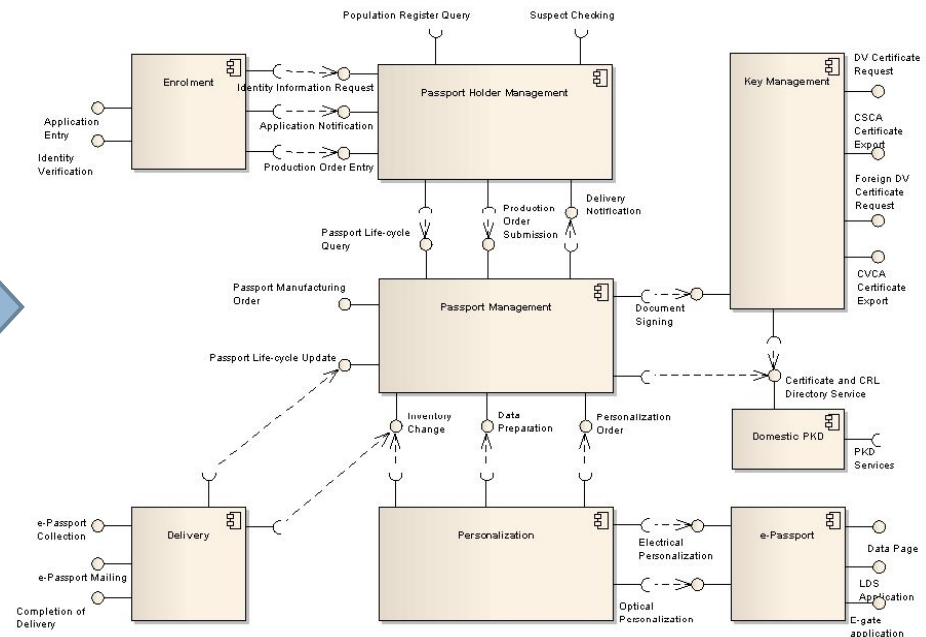
What needs to be tested?

Clear architecture and test plans are key

Functionality

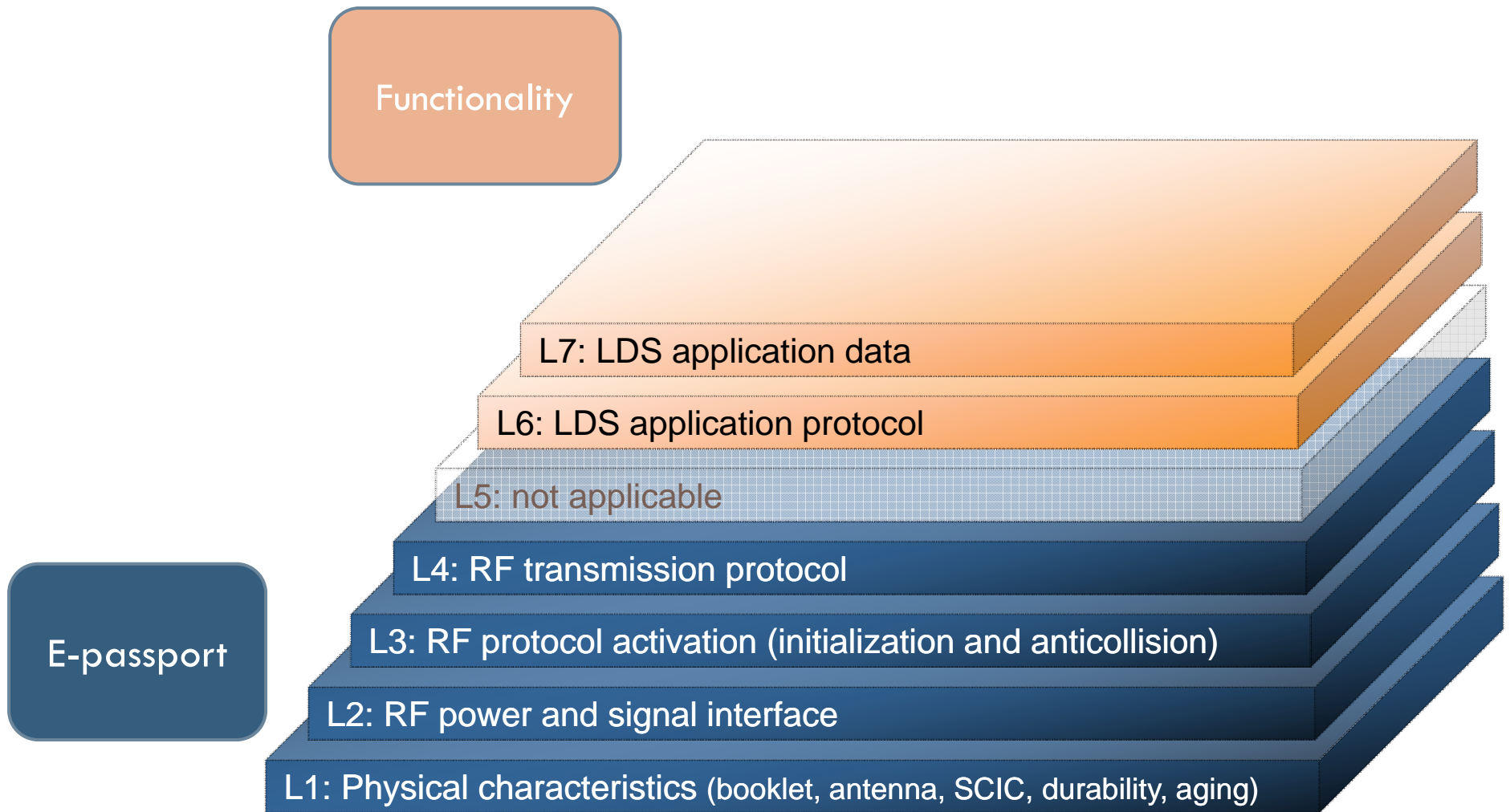
Systems

Integration
test on site
(SAT)



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What needs to be tested? ICAO Test Standards for eMRP



What needs to be tested?

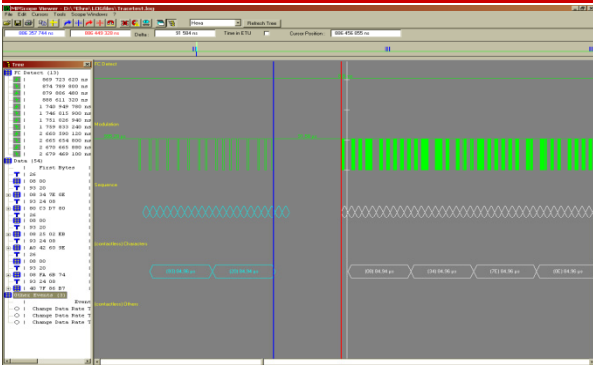
ICAO Test Standards for eMRP chip: Tools

Functionality

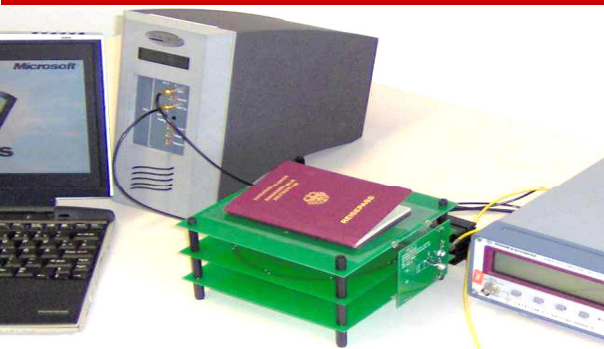
L1: Physical characteristics



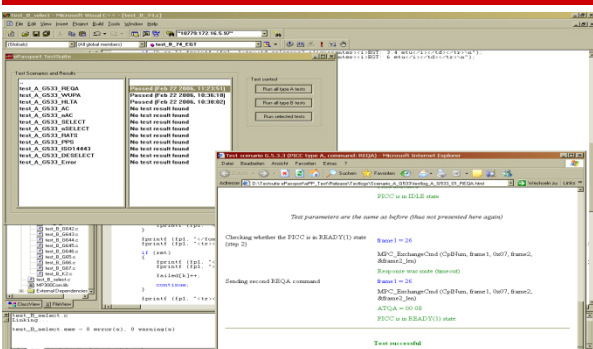
L3: RF protocol activation



L2: RF power and signal interface



L4: RF transmission protocol



E-passport

What needs to be tested?

Security evaluation of chip and LDS application

Security



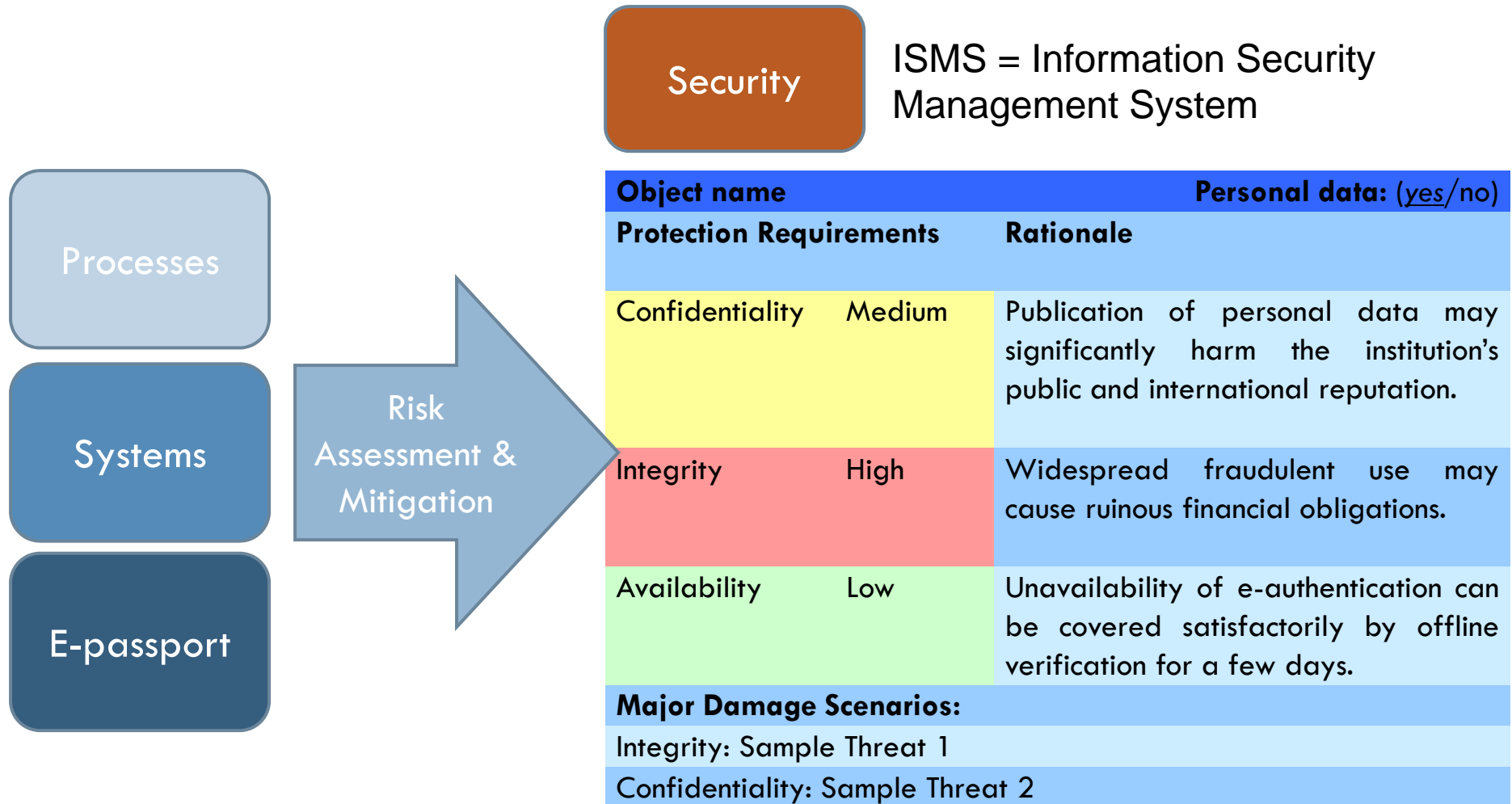
Code Review
Attack testing
Process Audit

E-passport

- Target of Evaluation:
 - RFID-Controller (HW), embedded-SW (OS), MRTD, ICAO LDS application
- Life-Cycles:
 - development, manufacturing, personalisation
- IT-Security Certification according to:
 - Protection Profile: MRTD

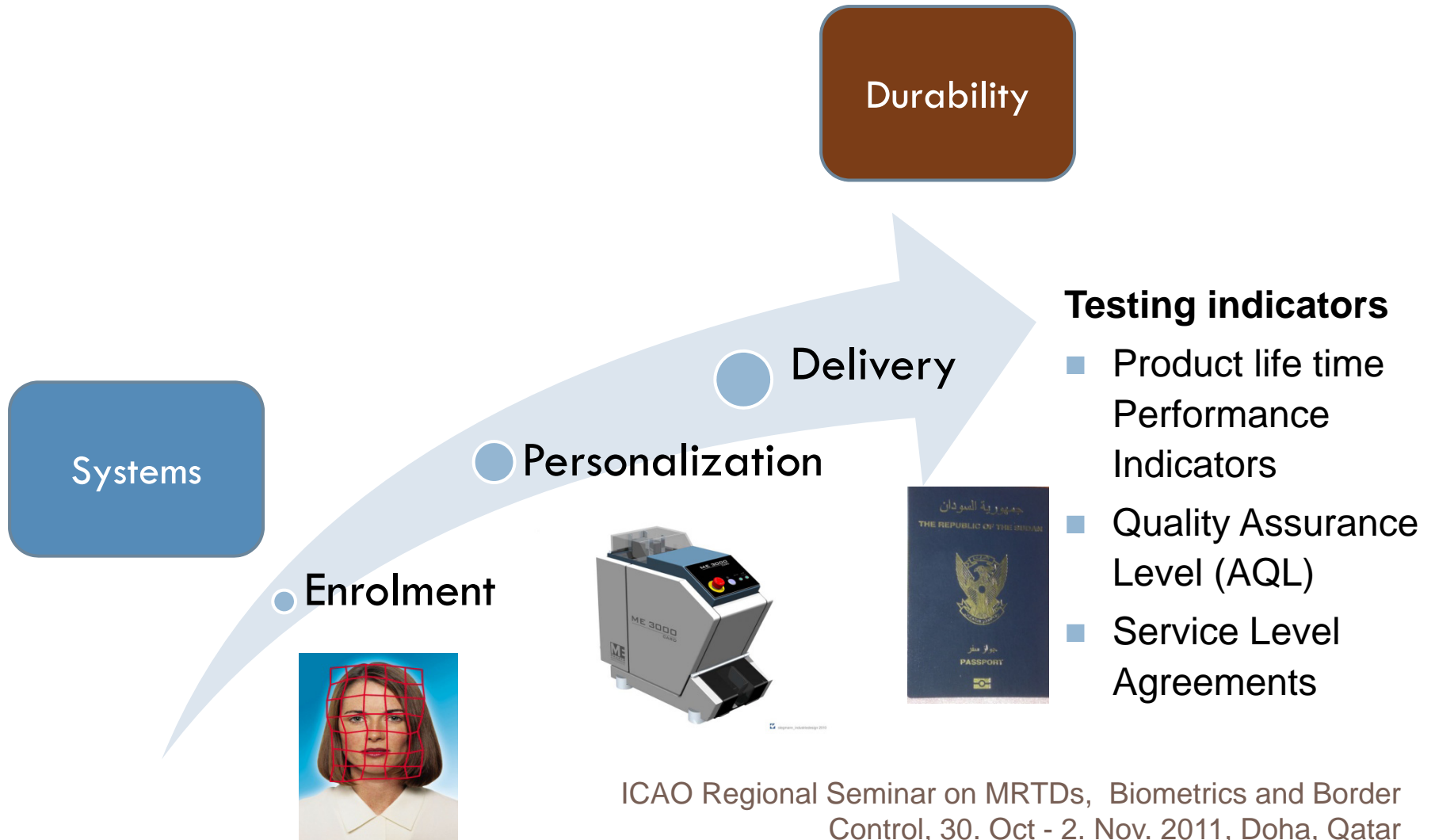
What needs to be tested?

ISO 27000 + ICAO Best Practice to design ISMS



What needs to be tested?

Systems performances are tested permanently



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What needs to be tested?

Durability testing for 10 y warranty

Durability

Testing booklet incl. inlay

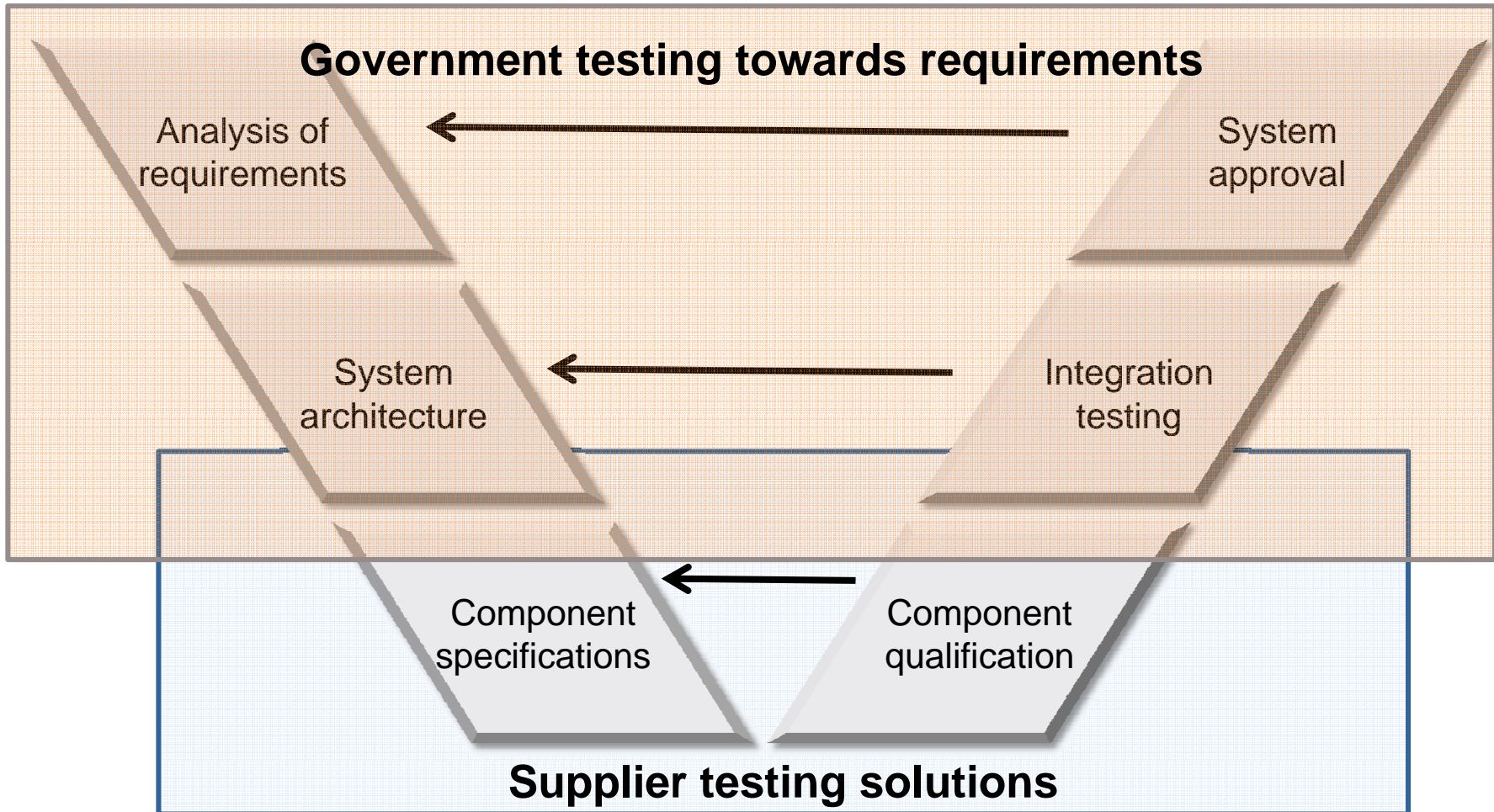
- Sheet binding
- Climate
- Impact / Pen
- Back pocket
- Torsion Fatigue
- Delamination
- Colour Fastness
- Resistance to Chemicals
- Datapage Abrasion
- X-Ray



E-passport

How to run professional test scheme?

Apply qualification and acceptance procedures



Which specifications are applicable?

ICAO Doc 9303

- **Doc 9303:**
 - ▣ Part 1 Vol 2: Specifications for Electronically Enabled Passports with Biometric Identification Capability, Sixth Edition 2006
 - ▣ Part 3 Vol 2: Specifications for Electronically Enabled eMRTDs with Biometric Identification Capability, Third Edition 2008
- **Supplement to Doc 9303 (Release 10, May 20th 2011)**
- **Supplemental Access Control (SAC) for MRTDs (Version 1.01, November 11th 2010)**

Which test specifications are applicable? ICAO Technical Reports

- TR: RF Protocol and Application Test standard for e-Passport Part 2:
 - ▣ Tests for Air Interface, Initialisation, Anticollision and Transport Protocol, Version 1.02, Feb 20th 2007
- TR: RF Protocol and Application Test standard for e-Passport Part 3:
 - ▣ Tests for Application Protocol and Logical Data Structure, Version 1.01, Feb 20th 2007
- TR: Durability of Machine Readable Passports
- TR: Tests for Supplemental Access Control (tbd)

Which test specifications are applicable? Selection of other standards

- ISO: ISO/IEC10373-6: Test methods for Proximity cards, 2011
- German BSI: TR-03105 Conformity tests for official electronic ID documents, 2010
- German BSI: Common Criteria Protection Profile MRTD with ICAO Application, BSI-PP-0026, 2010 and PP-0055, PP-0056

Which test specifications are applicable?

Still some gaps

- Missing:

- Test on physical security features (Doc 9303 V1)
- Test of quality of VIZ, MRZ
(OCR test specs work in progress)

- Not tested:

- optional data groups, like DG11, DG12 for additional personal / document data
- Content of data groups, like facial image or finger print

Which governmental test schemes are available?

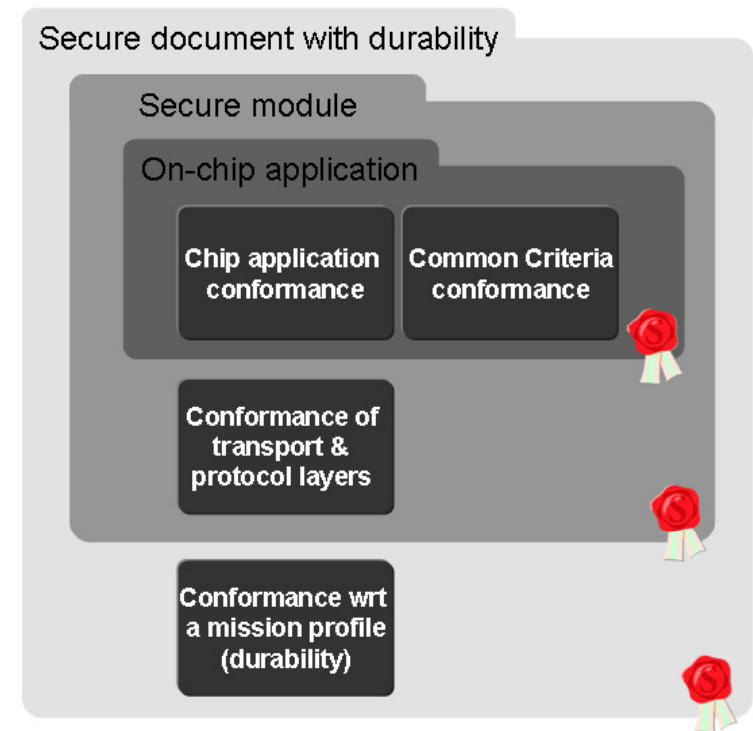
ANTS, France: e-passport certification



Agence Nationale Des Titres Sécurisés, France

(see <http://www.ants.interieur.gouv.fr/evenements/How-it-works.html>)

- Issues set of formal certificates
- Works with accredited test labs



Which governmental test schemes are available?

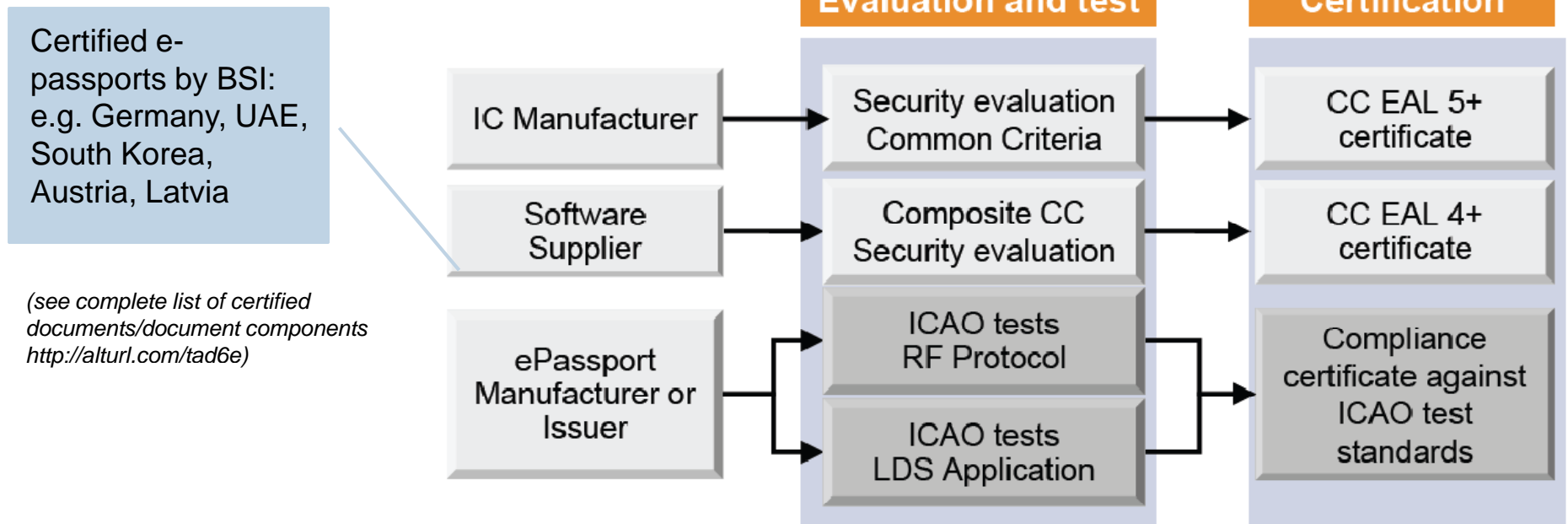
BSI, Germany: e-passport certification



Bundesamt
für Sicherheit in der
Informationstechnik

- Federal Office for Information Security (BSI, Germany) with accredited test house

(see list <http://alturl.com/rr3ky>)



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ICAO activities on developing a Doc 9303 Compliance Regime

- ICAO is issuing DOC 9303 since decades, but does not yet provide any service confirming compliance to the ICAO standards
- ICAO Implementation and Capacity Building Working Group (ICBWG) is currently working on a concept, how ICAO could provide such a service
- An initial working paper has been submitted to the ICAO MRTD TAG in Sept 2011
 - ▣ Work in progress!

THANK YOU!

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