Joint Research Centre

The Border Security Action 31001
Work on Biometrics and
Verification of Privacy

Canada-Europe eInclusion Symposium
Montreal-Ispra, 15 March 2007

Jan Löschner - BorSec Action

**Institute for the Protection and Security of the Citizen – G.06
Unit "Sensors, Radar Technologies and Cyber-security"
http://serac.jrc.it**

jan.loeschner@jrc.it

The Border Security Action 31001 (Objectives)

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• *To provide DG JLS with engineering support for the introduction of* electronic passports *in the context of the European regulations specifically with regard to ensuring their* conformity and interoperability *according to the ICAO requirements TAG-15.*

• To *assess* detection systems *for border control for* DG TREN, DG JLS and *FRONTEX* in the context of EU civil aviation regulation 2320/2002 and the explosives directive 93/15/EEC.

• To carry out competitive research under the FP6 program into security, *privacy* and usability *of electronic identification* funded by DG INFSO.

• To study conceptual aspects of the European security agenda on Surveillance systems for land borders, on the impact of border security measures on disabled people, on multimodal biometrics and on security related requirements in testing, evaluation and certification for DG EMPL, DG ENTR, DG JLS, DG TAXUD and FRONTEX,

• To promote standardisation and co-ordinate European initiatives on border related issues for DG JLS.

Domain: Border Security

- **Border checks / border crossing**
  (check points for goods and people)

- **Border surveillance**
  (green, maritime etc. borders between check-points)

- **Return Operation**
 (aspects of illegal migration)

Motivation

- ## European Union
  - Size: 4 million km2
  - Population: 450 million
  - Coast line 85,000 km
  - 1200 seaports
  - 500 airports
  - Hundreds of major railway stations

BIG e-passport interoperability test events at Ispra

Brussels Interoperability Group (BIG) Considers all issues relating to the introduction by EU Member States of electronic machine readable travel documents to ensure that Member States achieve uniformity for their respective electronic passports, identity cards used for travel, and other machine readable travel documents.

- Informal test of e-passports carried out on the 15. /16. May 2006
  - 13 states present,
  - 80 passports read,
  - 7 reader models,

- Interoperability test of e-passports on the 5. of December 2006
  - 10 EU countries
  - 2 non EU countries present
  - 85 passports tested
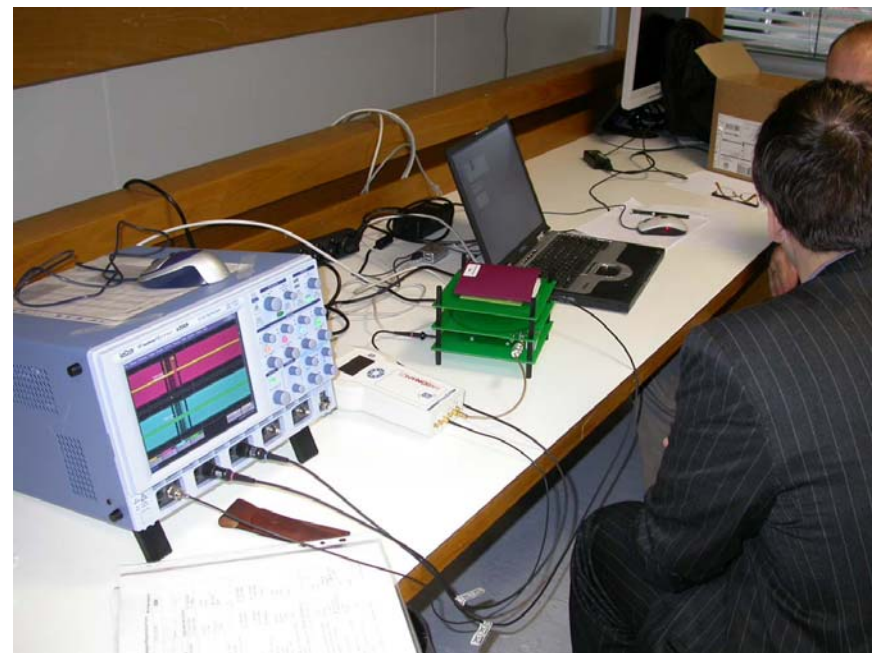
Interoperability test of e-passport containing protected finger prints at Ispra

- 1st Interoperability test of e-passports with finger prints protected by the extended access control on the 6. and 7. of December 2006

  - 10 e-pass readers tested
  (G&D, Gemalto, Sagem, ASK, Oberthur, Atmel, Cryptomathic, RTE, SDU, Gep)

  - 11 passports with extended access control tested,
  - 75 participants from 17 countries,

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Why?

- Large scale introduction of biometrics requires multi-disciplinary expertise

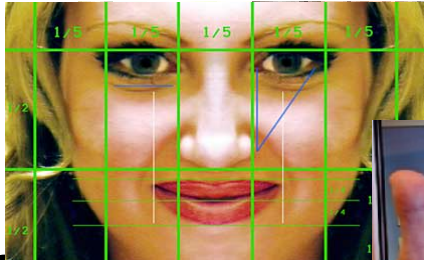- Based on the political decision about its introduction, immediate action at European level is required

How?

Development of commonly agreed test and evaluation methodologies with other relevant stakeholders

- Evaluation and conceptual study of new biometric technologies (in particular face recognition and cognitive vision)

Biometrics

Security

Efficiency

Convenience

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Biometric Passports

Coming in 2006...

UK Passport Service

Passkontrolle
Passport Control

The advent of Biometrics

What happened?

- Post 9/11 - "From zero to hero": A slowly progressing community is forced to deliver

- High expectations from politics on increasing security through biometrics

- US requests and EU legislation on passports major driver for R&D and investments

Competitive projects

- Project title: STABORSEC – Standards for Border Security Environment
  - Objective: Inventory of needed standards for stand-alone equipments used for Border Security.
  - Project funded under the FP7 coordinated by SAGEM Defence Security (8 partners from 7 countries)
  - Project duration: 14 months
  - JRC role: Coordination of WP 5 on Standards Assessment Contact email: zdenek.riha@jrc.it

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- Objectives: To make an inventory of European capabilities and to develop an R&D agenda

- Partners:

  - European Biometrics Forum

  - Fraunhofer IGD

  - National Physics Laboratory

  - JRC/ IPTS

- Funded by DG Enterprise under the "Preparatory Action for Security Research"

New Technologies
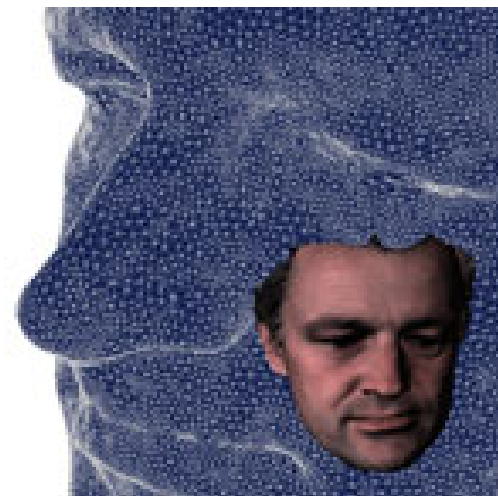
- Hybrid 2D/3D Face Recognition
(cooperation with European project "3DFACE")
Objective: To investigate whether face recognition can deliver similar precision as fingerprint

- Multimodal Biometrics
(cooperation with European project "BioSecure")

- Cognitive Vision for automated video surveillance

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# BioSecure Network

B I O S E C U R E

www.biosecure.info

- Objective: To strengthen and integrate multidisciplinary research effort in multimodal biometrics

- Main development: shared test databases

- 30 research partners, including 2 US universities

- Duration of funding: 2004-2007

Example: Cognitive Vision

- Important research initiative started by US-DHS
  - Europe trying to catch up quickly!

- Still no breakthrough at the conceptual level, but significant improvements in basic technologies:

  - Increased computing power

  - high resolution digital cameras

  - automatic object tracking

Movie file (mpeg)
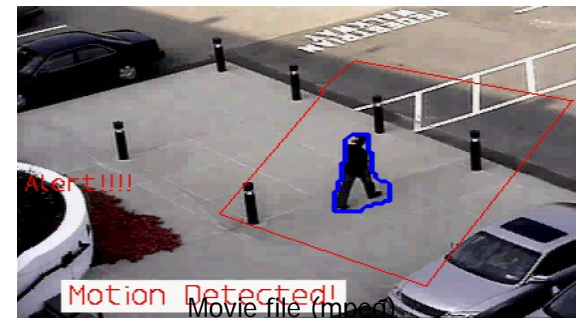
Future work

- Structured analysis of incompatibilities between biometric modalities and the requirements of disabled people with regards to border security processes,

- Repository of e-passports,

- Organization of test events for member states
  - Interoperability
  - Extended access control

- Application development and testing

- Training

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Thank you !