

Biometric Passports: Policy for Domestic and International Deployment

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August 1, 2005



Enhanced Border Security Act of 2002

- **Passed in the wake of September 11th attacks**
- **“technology standard and interoperability requirements respecting development and implementation of the integrated entry and exit data system and related tamper-resistant, machine-readable documents containing biometric identifiers”**

Overview

The U.S. is pushing many nations to incorporate biometrics into passports. How can this be successful?

- **How did we get to today?**
- **What problems do we face?**
- **How do we fix them?**
- **What can we learn from this project?**



How did we get to today?

Who will participate?

- **Visa Waiver Program members**
 - 27 nations including the U.S., most members of the European Union, Singapore, and Japan
- **Standards by International Civil Aviation Organization (ICAO)**

What has been done?

Biometric Selection

- **February 2002- ICAO selects**
 - **Face recognition**
 - **Iris scan technology**
 - **Fingerprint technology**
- **June 2002- Selects facial recognition as primary biometric**

What has been done?

Data Storage Selection

- **Criteria included**
 - **Non-proprietary technology**
 - **Storage in excess of 20KB**
 - **Quick transmission times**
- **New Orleans Resolution, 2003**
 - **Contactless IC chips (RFID) chosen**

Requirements under U.S. Law

- **June 26, 2005- VWP passports all have machine-readable zone**
- **October 26, 2005- New VWP passports have printed digital photograph on data page**
- **October 26, 2006- New VWP passports contain RFID chip**



What problems do we face?

Obstacles to Full Deployment

- **Technical**
 - **Data storage and privacy**
 - **Biometric Accuracy**

- **Political**
 - **International**
 - **Domestic**

Data Storage & Privacy

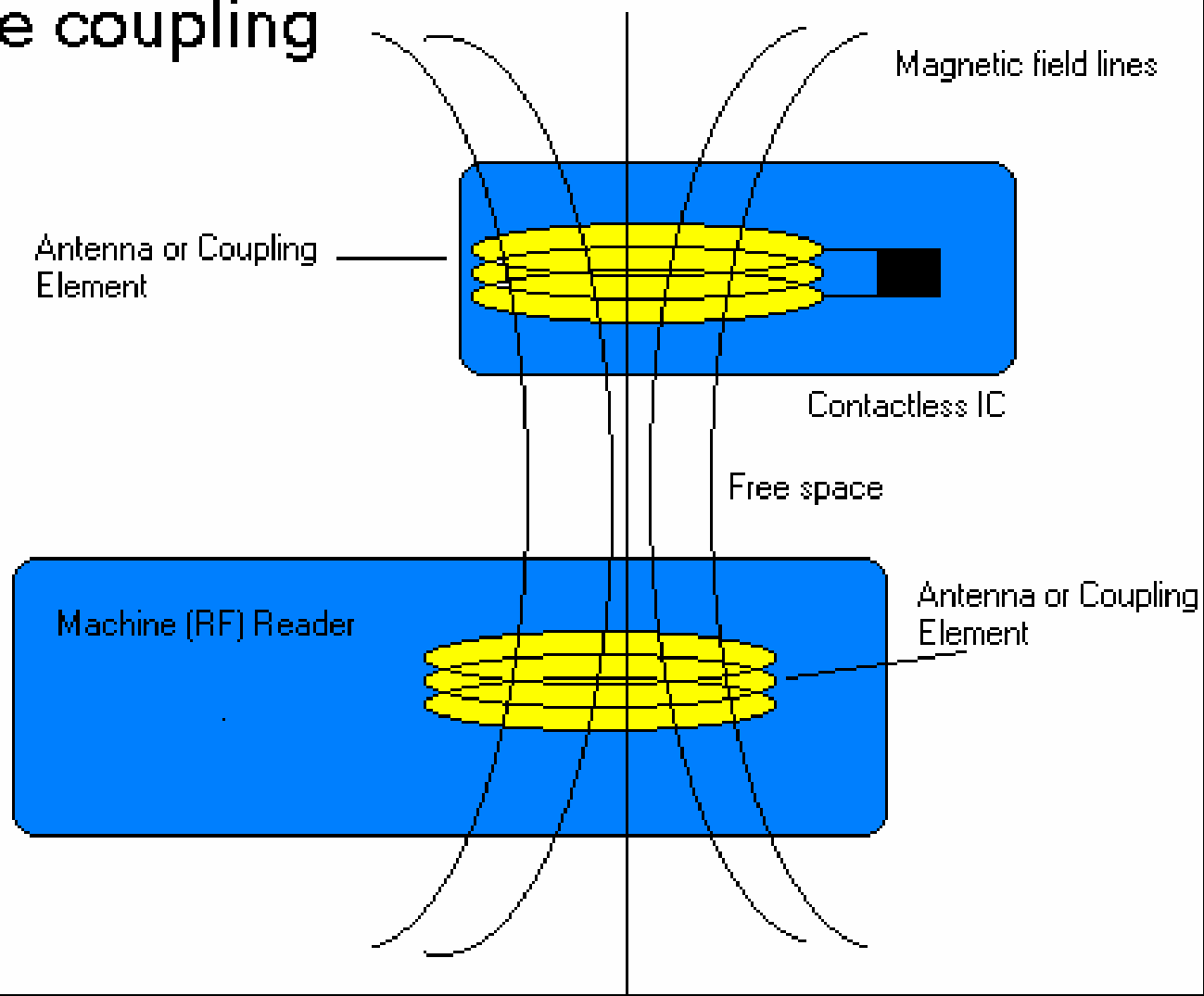
- **Issues**

- **Unauthorized access prevention**
- **“Spying” on data transmission**
- **Some durability concerns**

- **Concerned Organizations**

- **ACLU, Privacy International**
- **Business Travelers Coalition**

Inductive coupling



**Credit: International Civil Aviation Organization
Document 9303 Contactless IC Annex**

Basic Access Control

- **Requires authentication based on MRZ data**
- **Encrypts the data transmission using that data as a key**
- **Substantially degrades performance of the transmission**
- **Optional in ICAO standards**

Faraday Cage

- **A metallic surface enclosing a volume**
- **Prevents EM waves from entering/exiting**
- **Concept could be applied to e-passports**



Biometric Accuracy

Biometric	Accuracy Percentage	False Positive Rate
Two-finger fingerprint (with all fingerprints taken by experienced officers)	99.6%	1 out of 1000
Face Recognition (with controlled lighting)	90%	1 out of 100
Face Recognition (with uncontrolled lighting)	54%	Unknown

Iris Recognition

- **Accuracy similar to fingerprints**
- **May be preferred by U.S. due to cultural concerns**
- **Iridian patent expiration may open doors**

International Challenges **Meeting U.S. Deadlines**

- **Progress varies greatly between nations**
- **Austria, Belgium, Finland, Germany, Luxembourg, and Sweden ready by end of 2005**
- **Some potential difficulty meeting 2006 deadlines**

Major Differences in Implementation

- **European nations have required BAC**
- **U.S. possibly pursuing iris scans, with the EU requiring fingerprints in 2007**
- **Discussion of linking e-passport and national ID card (U.K.)**



How do we address these issues?

Addressing Domestic Concerns

- **Privacy group opposition to RFID**
- **Cost- \$200 million**
- **Congressional inquiry into choice of facial recognition**



How do we address these challenges?

- **Include Basic Access Control and Faraday Cage**
 - **Control the discontent of ACLU**
- **Prove efficacy of facial recognition, or move forward with iris**
 - **Resolve differences with Europe**
 - **Possibly adopt secondary standard**

How do we address these challenges?

- **Continue to pressure VWP countries to meet October 26, 2006 deadline**
 - Maturity of technology
 - Time for implementation
- **Be prepared to grant short extensions**
 - Would require Congressional action



**What can we learn from
this investigation?**

Other Related Hot Topics

- **Identity Theft**
- **National Health Information Network**
 - **Patient Ownership of Records**
- **Government storage of biometric and other data**
- **Real ID Act**



Questions?

