NIST Storage & Processor Card Workshop
July 7 & 8, 2003, Gaithersburg, MD

Optical Memory Cards
in
Federal Government

Stephen Price-Francis

Vice President, Business Development

LaserCard Systems Corporation

Optical Memory Cards

Presentation Content

- Introduction & Overview
- Technology & Business Discussion
- Standards & Requirement Issues
- Forecast

Introduction & Overview

Optical Memory Card:

– **Key Characteristics**

Federal Government Users:

– **Defense Logistics Agency**

– **Department of Homeland Security**
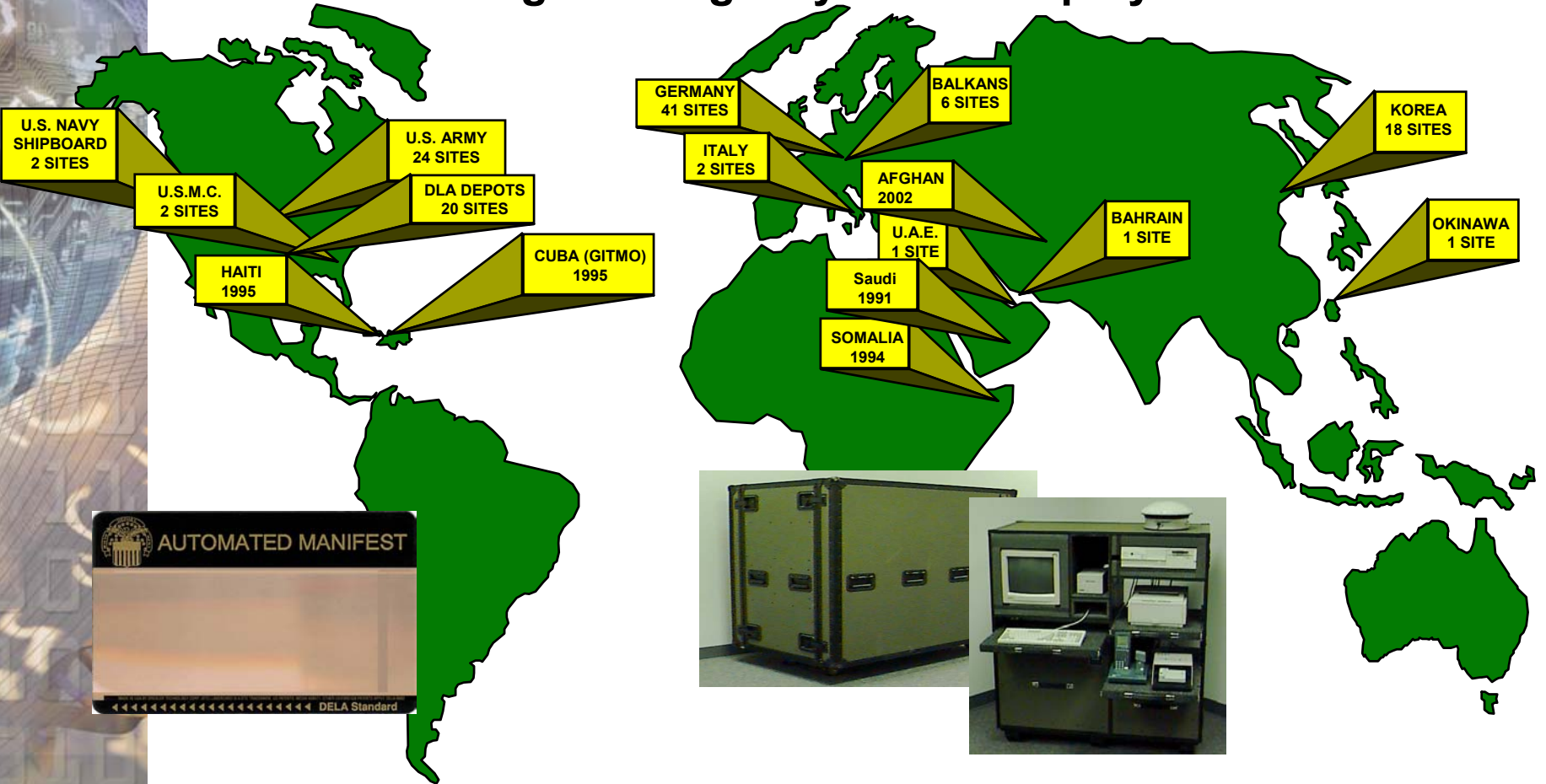
– **Department of State**

Optical Memory Card

Key Characteristics:

- **High Data Capacity**

- **Security/Counterfeit Resistance**

- **Durability/Reliability**

- **High speed transactions**

- **Full standards compliance**

Optical Memory in Secure ID

Department of Homeland Security (INS):

- **Green Card 1997**
  - **About 8 million issued**

Department of State:

- **Border Crossing Card (LaserVisa) 1998**
  - **About 7 million issued**
- **Optical Memory Stores:**
  - **Demographics**
  - **Facial Image**
  - **Fingerprint Image(s)**
  - **(BCC) Biometric Templates**

- **The largest biometric based deployment in N. America**

Optical Memory in Secure ID

Citizenship & Immigration Canada:

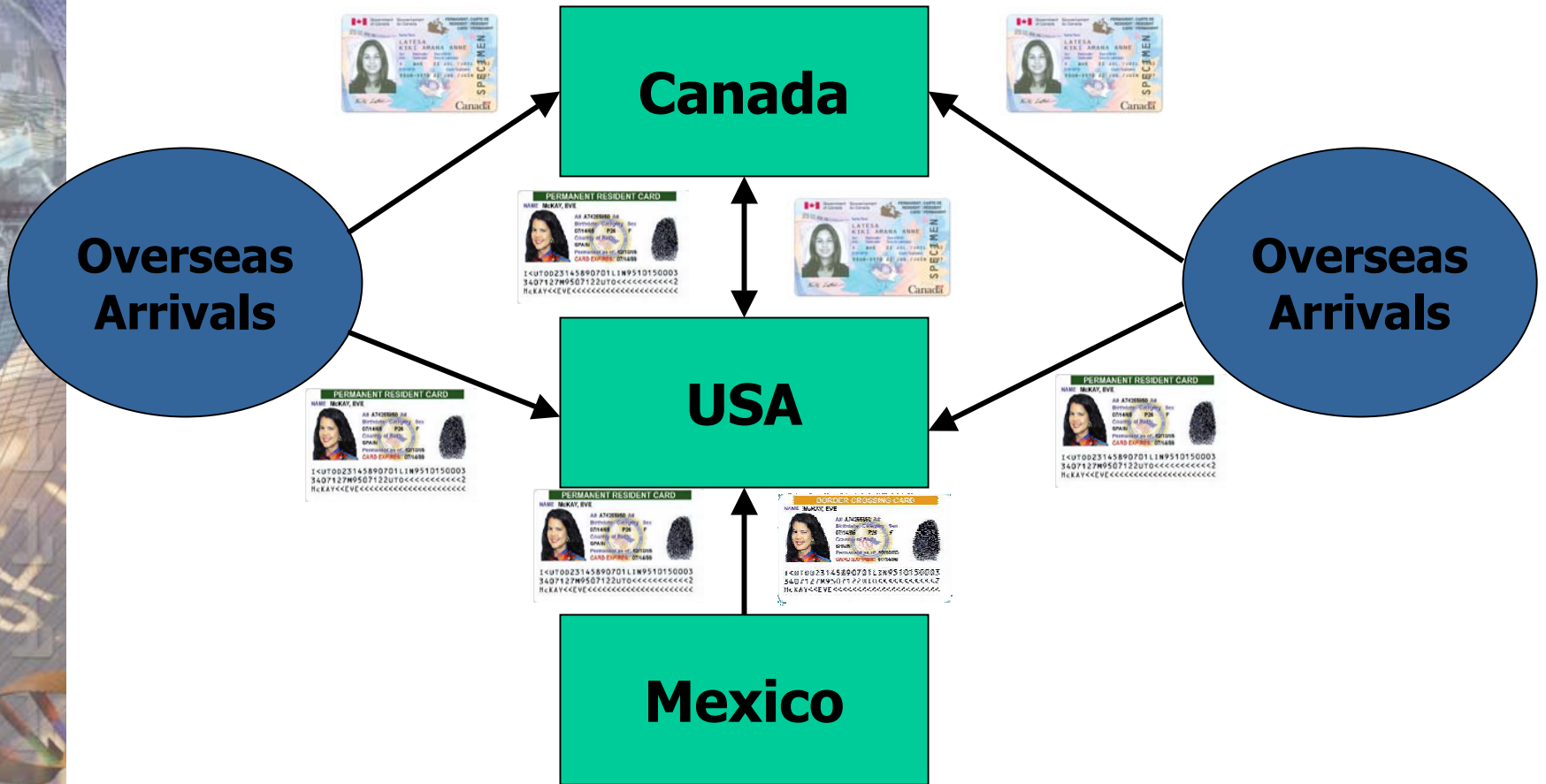- **Permanent Resident Card 2002**
    - **About 500,000 issued**

- **Optical Memory Stores:**

    - **Demographics**

    - **Facial Image**

    - **Landing information**

- **Component of US/Canada Smart Border Action Plan**

Optical Memory on the Border

Optical Card Readers on the Border

- **2002/3 US Reader deployment**

    - **Congressional Appropriation**
    - **Feb 03 Pilot intercepts over 350 impostors**
    - **April 03 DHS Presolicitation Notice for 1,000 readers**
    - **Planned for Southern US border and major airports**

- **2002/3 Canada Reader deployment**

    - **230 readers purchased**
    - **Deployment to start 2003**

Vendors
Federal Business Opportunities

70 -- Optical Reader/Writers

General Information

Presolicitation Notice
Solicitation Number: COW-3-Q-0039
Posted Date: Apr 22, 2003
Original Response Date: 05, 2003
Original Archive Date: May 20, 2003
Current Archive Date:
Classification Code: 70 -- General purpose information technology equipment

Recent Key Developments

- **Optical/Contactless technology**

    - **Optical Memory provides mass storage:**
        - **Original transportable face, fingerprints, iris images**
        - **In line with ICAO/NIST recommendations**

    - **Contactless chip activated for local use**
        - **Time limited access**
        - **Physical access controls**
        - **Facilitation applications**

- **TSA Evaluates OMC for TWIC**
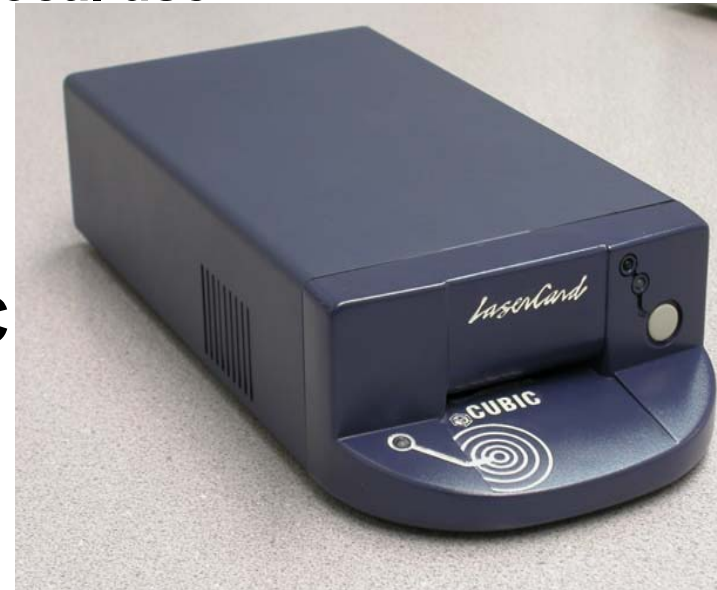
Technical & Business Discussion

Why Optical Memory Card?:

– **Application Requirements**

Cost Effectiveness:

– **"Futureproof" technology**
– **Mission Critical support**

Why Optical Memory Card?

Application Requirements:

- High capacity, scalable storage

- Tamper & Counterfeit Resistance

- Durability and Longevity

- High speed transactions

- Coexistence with other card technologies

- Full standards compliance (ISO, ICAO, ANSI)

- Global interoperability

Why Optical Memory?

High Capacity, Scalable Storage

Highest card data storage capacity

Up to 2.8 Megabytes

e.g., facial image, demographics, biometrics, etc.

Advantages and Opportunities:
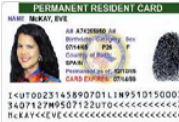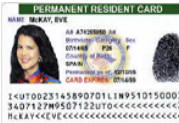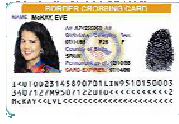
Flexibility in planning and design

Change/add features *without reissuing card*

Exploit newly emerging trends

Add value

Secure, Scalable Storage

Stored Feature	Canada PRC	US Green Card	Mexican LaserVisa	Italy National ID
Facial Image				
Demographics				
Fingerprint Image	possible			new requirement
Biometrics	future use			future use
Visitor Visa	N/A	N/A		possible
Entry/Exit records	possible	possible		possible

Why Optical Memory?

Tamper & Counterfeit Resistance

Secure because:

- Stored data *CANNOT* be changed
- Optical media meets legal requirements of a "document"
- Unique matching of Card and Encoder/Reader
- Memory can be marked with eye visible data

Advantages

- Unequalled counterfeit resistance
- Secure automated authentication
- Tampering with authentic data impossible
- Supports visual authentication

Market Feedback on Security

"The most counterfeit resistant ID card in the world"

US Immigration & Naturalization Service

Forensic Document Lab

1998

"The most secure publicly issued ID document in the world today"

State of Florida

Fraudulent Identification Unit

2002

Why Optical Memory?

Durability

Withstands constant use & inconsiderate handling

. **"The Optical Memory Card is the most durable and reliable media … in over thirty years of DoD logistics experience."** Defense Logistics Agency, 2003

Advantages

Reliability

Border Entry is a mission critical application

Defense Logistics is a mission critical application

"Futureproofed"

Update/change programs/services without reissue

Leverage return on investment

Standards & Requirement Issues

International Standards

- Technology
- Application
- Coexistence of multiple technologies

Requirements:

- Federal Interagency Interoperability
- International Interoperability
- Transportability of data

Optical Memory Standards Compliance

Basic Technology

• ISO 7810 (ID-1)

• ISO 11693 & 4 (Optical Memory Card)

• ISO 10 373 Part 1 & 5 (Test Methods)

Applications

• ICAO Doc 9303 Part 3 (Travel Documents)

• Technical Reports:

    – Coexistent Technology

    – Logical Data Structure

Needed Standards: A Strategic Opportunity

Federal Interagency Interoperability

- GSA Specifications (equivalent of IC Chip)
- Optical/Contactless IC Hybrid

International Interoperability

- Smart Border Action Plan
  - Harmonization of Inspection Infrastructure
  - Controlled exchange of data
- Global Interoperability
  - Patriot Act
  - Border Security Act

Transportability of biometric images
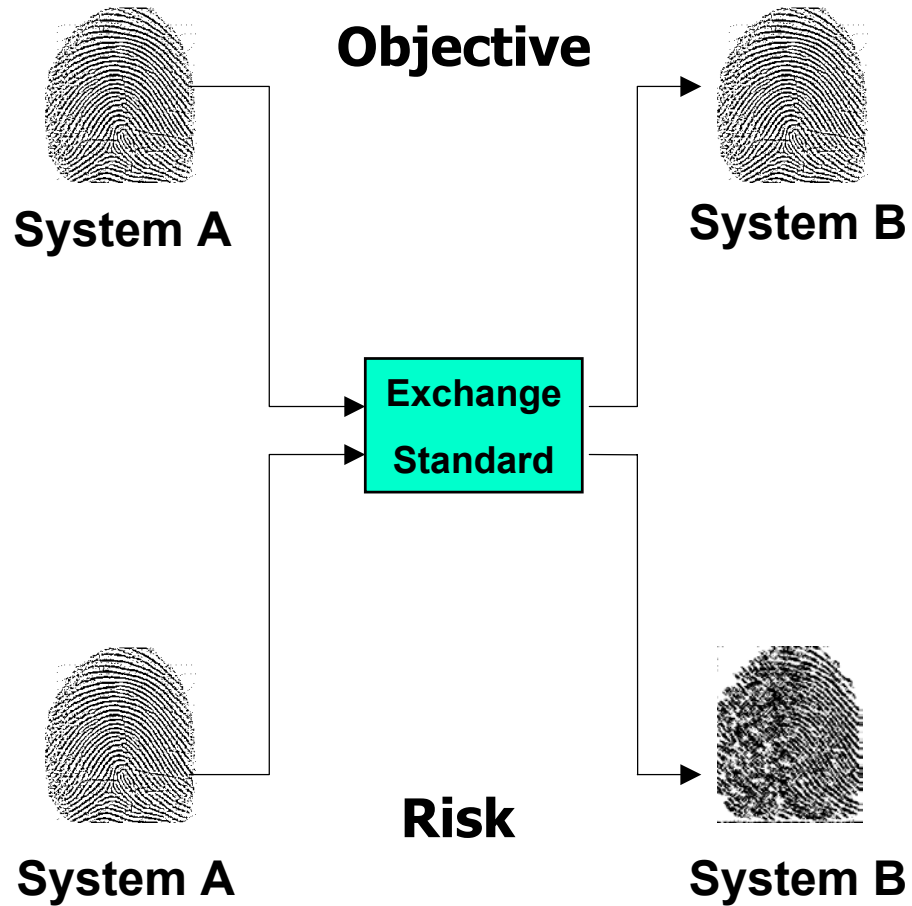
- NIST recommendations
- ICAO recommendations

Biometrics Transportability

Standards Activities:

> **Interoperability**
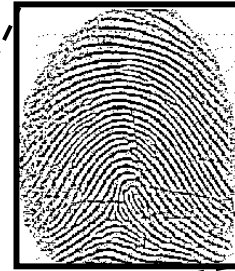> **Compatibility**
> **Data Exchange**

Loss of detail can mean:

> **Reduced Accuracy**
> **Compromised Security**

Objective

System A → System B

Exchange Standard

System A

Risk

System B

Biometrics Transportability

Original "True" Image as the standard:

Maximum accuracy

Maximum security

Supports visual (human) verification:

    Face is the international standard for Border Inspection

    Fingerprint is the international standard for Law Enforcement

Fully Transportable across system boundaries

Optical Memory Cards -Forecast

US:

- Continuing expansion of user base
- Features in US VISIT (Entry/Exit)
- Possible new applications, e.g., TWIC
- Use of technology in federal sphere, e.g., employee ID

N. America:

- Smart Border Action Plan
- ?NAFTA role

International:

- Expanded use as national ID and travel card
- Coexistence with contact & contactless chips