Government Implementation of Smart Cards & Biometrics

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Commonality Across Government

DoD CAC and GSA Smart ID:
Same Structure and Applications for active buyers

- CAC Card
  - Army
  - Navy
  - Air Force
  - Marines
- Smart ID
  - Homeland Security/TSA
  - State Dept
  - Justice/INS
  - GSA
  - Treasury

State & Local

- Transportation Workers
- First Responders

GSA's Smartcard Vision

- Single card, multiple purpose, biometric enabled
- Secure access to government facilities, systems,applications, and data
- Interoperable cards, readers, and applications
- Enable employees to do the job faster, better, cheaper, and more securely

DoD Smartcards & Biometrics

- Historically DoD has moved to implement smartcard strategies throughout the services
- DOD ID card for logical and physical access
- Next steps are biometric development efforts through the BMO
- Defense Manpower Data Center (DMDC) – issuer
- 13+ million cards, 1,000,000 issued to date

CAC: Scope and Components

- Multi-application card with magnetic stripe, bar code, and 32K chip
- Biometric container contained on card
- Solutions will interface with Defense Enrollment Eligibility Reporting System/Real-Time Automated Personnel Identification System (DEERS/RAPIDS) architecture.

DOD Biometric Progress

Biometric Working Group (BWG)

- Formed under direction of DOD Smart Card Senior Coordination Group (SCSCG) to coordinate, develop and evaluate alternatives for using biometrics with the CAC Card.
- Currently evaluating use of fingerprint & other biometrics via BioTrials.
- Biometric Fusion Center (BFC) handles technical issues associated with BioTrials.

DOD CAC Card + Biometrics

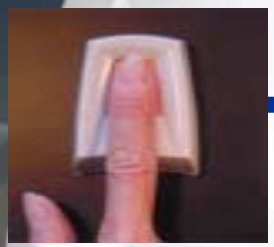
DOD CAC Card: Links Card to Card "Holder"

- Identification
- Logical Access
- Physical Access

DOD CAC Card + Biometrics: Links Card to Valid Owner

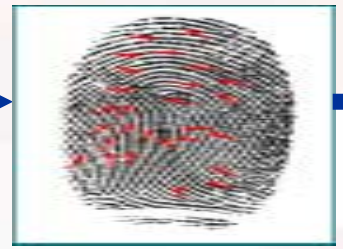
- Identification/Authentication
- Logical Access
- Physical Access

Technology: Finger Authentication



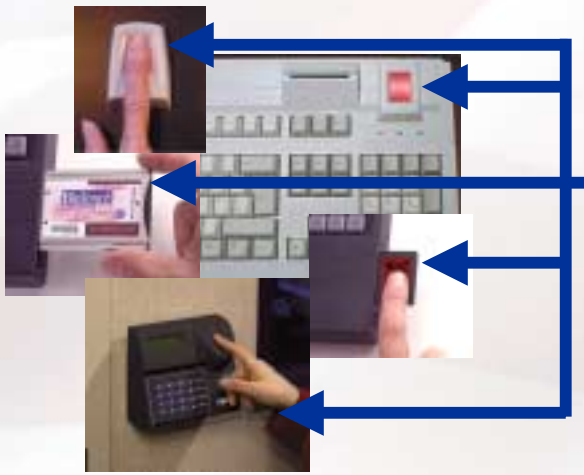
(1) User places finger on scanner

(2) Scanner captures finger image, & image is cleaned



(3) Biometrics traits such as minutia points are mapped

(4) Biometrics traits are extracted and encoded as X,Y coordinates to create a template



(5) An algorithm encrypts the template

Technology Enablers

- Existing database of DMDC minutiae-based fingerprints
  - important “piece” of the system already available
  - safeguards users’ privacy
  - moves technology forward w/o having to build a database
- Migration from serial to USB devices
  - increases I/O speed and therefore throughput
  - enables timely processing speeds for PKI and biometrics applications

Applicable Standards

Standards	Technology
Bio API	Driver to support smartcard readers
CEBEF	Common Biometric Exchange File Format
X.509	Standard for Digital Certificate Layout
X9.84	ABA Standard for Encrypting Finger Template
NIST ITL	Standard for transmitting images
B10.8	AAMVA standard for minutiae-based templates on commercial licenses

Bio-Verification: 4 Scenarios

- **Match-on-Server.** Store finger biometric on server, match on server.
- **Match-on-Client.** Store finger biometric on PC, match on PC.
- **Template-on-Card.** Store finger biometric on card, match on server.
- **Match-on-Card.** Store finger biometric on card, match on card.

Upon successful evaluation, development of enterprise solution.

Card Types & Biometrics

- I – Contact Card
  - Currently Being Used
  - Enterprise and Interoperability are key issues
- II – Contactless Cards
  - New Applications for Physical security
  - Biometric Authentication Faster
  - Speed is king

Understanding the Enterprise

- Use of Smartcards & Biometrics is a complex system
- Key Elements
  - Interoperability across the enterprise
  - Multiple issurers in a given enterprise
  - Variable rights and privileges for users
  - Command and control in a distributed environment for practical use

Migration: Government to Civilian

Bio Trials

+ BIOMETRIC

TWIC FAA

TWIC Air Ports

TWIC Sea Ports

TWIC Trucks

TWIC Transit

CAC Applications

Borders E&E

DoD wide Usage

Trusted Traveler

Thank You

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Identification & Authentication for a safer world