

# Fingerprint Data Exchange

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# Agenda

- ◆ Driving Needs
- ◆ History of Standards
- ◆ Use of Standards
- ◆ Challenge

# Driving Needs

- ◆ Initially paper forms were sent from local police to state ID bureaus and then on to FBI
- ◆ Rapid processing & response required electronic transactions (1990s)
- ◆ International exchange required common paper format - 1995 Interpol effort abandoned for electronic exchange

# History of Standards

## ◆ NIST view:

- *Five Automated Fingerprint Identification Systems (AFIS) deployed at FBI by 1981*
- *State, local, & federal agencies acquired AFIS*
- *Differences in minutiae metrics*
- *Live-scan technology developed in the 80s*
- *Process fingerprints from dissimilar systems*
- *Common fingerprint data interchange standard to eliminate need for exchanging physical evidence*
- *Required for communication with the FBI's IAFIS*

# History of Standards

## ◆ Data Format for the Interchange of Fingerprint Information

„ ANSI/NBS-ICST 1-1986	Minutiae-Based
„ ANSI/NIST-CSL 1-1993	Image-Based
„ ANSI/NIST-ITL 1a-1997	Facial & SMT
„ ANSI/NIST-ITL 1-2000	Higher Resolution
„ ANSI/NIST-ITL 1-2007	Irises, etc.
„ Working on XML version	

# Use of Standards

- ◆ ANSI/NIST Standard requires domain of interest implementation document:
  - FBI EFTS now EBTS (1994)
  - RCMP NIST-NPS-ICD
  - Interpol EFTS - based on UK Implementation
  - DoD EBTS - based on Iraqi National EFTS
  - State level EFTS documents
- ◆ These documents select:
  - Acceptable record types (e.g., gray scale 500 ppi images)
  - Compression technique
  - Textual data (biographic and demographic)

# Use of Standards

- ◆ Use of EFTS first demonstrated in 1995 between Boston PD and FBI - pre IAFIS
- ◆ Between disparate vendor systems
  - IAI Cross-Jurisdictional Demonstrations
    - 1997 across Internet between factories
    - 1998 across NELETS between operational sites
- ◆ All demos were image based

# Use of Standards

- ◆ NIST tested exchange of minutiae in 2006 to see the impact on reliability and accuracy (MINEX)
  - Not for Criminal Justice applications and definitely not for latents

# Challenge

- ◆ Transactions with 1,000 ppi images are large even when compressed
  - Need images to perform verifications (other than lights out)
- ◆ FBI's ULW permits exchange of latents at the minutiae level
  - Recommended that image accompany transaction
  - No test have been run to compare native performance to ULW submittals



Questions?