NIST Special Publication 800-76

Biometric Data Specification for Personal Identity Verification

February 14, 2005

Overview
NIST Special Publication 800-76

*Biometric Data Specification for Personal Identity Verification*

- Specifies enrollment fingerprint transactions.
- Specifies fingerprint storage by agencies.
- Specifies face storage by agencies.
- Specifies mandatory biometrics on PIV card.
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Biometric Data Specification for Personal Identity Verification

Changes from January 2005 Draft:

• ANSI/INCITS 378 templates replace ANSI/INCITS 381 images.
• Addition of verification requirements.
• Addition of conformity requirements.
• Addition of performance based qualification criteria.
• BioAPI has been dropped.
SP 800-76 Template Specification

• Mandatory biometric is now fingerprint templates.
• Template specification is the INCITS 378:2004 standard.
• 800-76 template specification is an application profile of INCITS 378
• 800-76 template specification restricts the options of INCITS 378:
  – No extended data
  – No proprietary data
  – Up to three views for each finger.
  – Restriction of minutia type (bifurcation, ridge ending)
Fingerprint Imaging and Retention

• Flat fingerprint imaging is specified as the main mode of image collection
• The FBI has supported the Type 14 based transaction since addition of Appendix N to the Criminal Justice Information Services Electronic Fingerprint Transmission Specification in May 2005.
• Fingerprint images are retained by agencies.
• Retention supports regeneration of templates, should amendment of minutiae specification make it necessary.
Facial Data Specification

• Face specification is INCITS 385 for image acquisition and storage.
• Face specification is likely not applicable to PIV on-card storage. It is more appropriately used to support the printed image, and human check for card issuance and re-issuance.
• Face specification is appropriate for automated face recognition applications where needed.
• The compression ratio has been relaxed to 15:1, suitable for server-side storage.
Common Biometric Exchange File Format (CBEFF) Requirements

• A CBEFF wrapper is required for biometric data on PIV cards.
  – Includes mandatory elements.
  – Includes all agency-optional biometric data.
• A new CBEFF Patron Format will be established.
• The new CBEFF Patron Format is essentially Patron Format A with:
  – Definitive data types for its elements
  – Inclusion of the FASC-N, per 800-73.
Verification Requirements

• Sensor meets EFTS/G equivalent specifications. Both enrollment and single finger sensors will be FBI certified.

• Image output support required for evaluation.

• Threshold calibration required for non-native PIV Card templates.
Conformance and Guideline Status

- Products must have completed MINEX ’04 testing or equivalent to be conformant to SP 800-76.
- MINEX report expected on schedule (Q1 2006).
- INCITS M1.3 has a new ad hoc group on INCITS 378 minutia angle computation.
- Comment period for December 2005 SP 800-76 Draft has closed. Publication was February 1, 2006.
800-76 was revised in response to 468 comments from industry and government, from US and abroad.

• Authentication sensor:
  – area reduced: min in x-direction 12.8 mm
  – certification: EFTS Appendix G replaces Appendix F.

• Minutiae Template:
  – Add MINEX angle computation.
  – Maintained <= 128 minutiae.

• Many typos and clarifications.
  – Including clarifying figure on notional image flow, Figure 1.

• NFIQ
  – Refined procedure for re-acquiring images on basis of quality measurements of slap segmented images.

• Revamped CBEFF header.
  – Flag for encryption is added.
  – Maintained that all biometric data must be signed