

NIST Special Publication 800-76
*Biometric Data Specification for
Personal Identity Verification*

February 14, 2005

Overview

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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