Biometrics

Greg Fiumara

Information Access Division

NLST

National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

Overview

- Modifications to NIST SP 800-76-2 (circa 2013)
  - Outdated references
  - New technologies
  - Updated compliance testing

- Aim for **<u>no</u>** breaking changes to:
  - Existing capture devices
  - Accuracy specifications
  - Template standards
  - Modalities

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Fingerprint Image Quality

- Migrate NFIQ to NFIQ 2.0
  - Higher-resolution quality
  - Better predictor of accuracy
  - Based on multiple features
  - Standardized as ISO/IEC 29794-4:2017
  - Worldwide adoption

- Re-evaluate thresholds for "good" quality
  - Previously NFIQ 1 or 2 "transformed" to 100 and 80.

- Revise NIST IR 7422 to use NFIQ 2.0
  - Monthly summary of operational quality calculation

NFIQ: 1
NFIQ 2.0: 84
Source: NIST Special Database 302

National Institute of
Standards and Technology
U.S. Department of Commerce

Non-Contact Fingerprint

- Devices exist in many forms
  - Only one certified
- Explicitly "Not for use with CJIS systems"
  - Verification only
- Products aligned for high-volume use

Source: NIST Special Database 302

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Non-Contact Fingerprint

- Limited analysis available. NIST needs data:
  - NFIQ 2.0 training
  - Algorithm testing

- *Have you deployed a non-contact device?*
  - *Can you provide data to NIST for research?*
    - greg@nist.gov to set up a data transfer agreement

NIST
National Institute of
Standards and Technology
U.S. Department of Commerce

Mobile Phone

- **Use case: biometric verification to PIV enrollment data derived onto mobile phone**

- Issues
  - Device-provided algorithm
    - No studies confirming algorithm accuracy/performance
    - Manufacturers not participating in studies
  - Device-provided sensor
    - No studies/confirmation of device liveness detection
    - Fingerprint: is sensor FBI Appendix F or PIV certified?
  - Secure enclave storage of templates/images possible?

NIST
National Institute of Standards and Technology
U.S. Department of Commerce

Questions?

<u>Contact Information</u>

Biometrics:
Greg Fiumara
greg@nist.gov

PIV PoC:
Hildegard Ferraiolo
PIV Program Manager
hildegard.ferraiolo@nist.gov

Andrew Regenscheid
Andrew.Regenscheid@nist.gov