

# Initiatives Toward Re-usable Testing

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# Why Pursue Re-usable Testing?

## Testing can get expensive

- Scenario testing with sufficient scale to justify declaration of low biometric matching error rates are time and resource consuming

## Repetitive testing is wasteful

- Conformance to a standard (e.g. Data Interchange Format for Fingerprint Images) need only be done once for a version of a format generator

*A little motherhood goes a long way*

# Are there examples of re-used test results?

- Appendix F Certification -fingerprint sensor image quality
  - Public list of certified products
  - Acquisition with confidence
- MINEX interoperability - fingerprint template generators/matchers
  - Open, public test report (quantitative)
  - Cited by GSA, TWIC,...

*Lead by example*

# What are the prerequisites for reusable testing?

- Agreement on the method/procedure for conducting test and reporting results
- Methods should be Open (shared across the trio of tester/supplier/consumer)
- Some testing results are binary (Pass/Fail), others may be quantitative (*tend to be more shareable*)

*Proceed directly to GO, collect \$200*

# Comparison of Test Types

Test Type	Characteristics	Re-usable?	Relative Cost
Conformance to Standards	Automated, Repeatable	YES	Low
Performance - Technology	Repeatable, Complex	YES <i>(with care)</i>	Moderate
Performance - Scenario	End-to-end, NOT Repeatable	Graded YES Pass/Fail Maybe	High
Common Criteria	Few biometrics, complex lengthy	YES	Very High

*Do you get what you pay for?*

# What makes sharing/re-use work?

- Willingness and authority to share
- Tested by a trusted source (independent or accredited)
- Tested to common/compatible requirement
- Tested at the same level of integration
  - Integration levels such as component (template generator), subsystem (fingerprint capture device) or system (mobile handheld)
  - Less sharable as level of integration increases
- Capability to disseminate information
  - Open when practical
  - Controlled when necessary

*Share, share alike*

# What is the USG Motivation?

## Motivation:

- Section 6 of the 2011 NSTC National Biometrics Challenge document cites the benefits of **standards** related to biometric testing including **reduced product costs**. One of the contributing factors stated is the **reuse of testing procedures and certifications**.

*Nothing quite like a good Challenge*

# USG Response? “BITES”

## ***Biometric Interagency Testing and Evaluation Schema***

- Team formed in December 2011 with multi-agency participation
- Spawned by NSTC Subcommittee on Biometrics & Identity Management, Standards & Conformity Assessment Working Group
- Effort to **develop a repository** for sharing biometrics test methods and successfully completed test results.

*Taking a bite out of “information silos”*

# What is the Vision of the End-State?

*(excerpt from BITES report used to establish the effort)*

“When the process for **sharing of biometrics testing information** and resources has been established and institutionalized across the United States Government (USG), several of the points identified in the *National Biometrics Challenge* document will be met. The benefits of BITES to the government and commercial providers of biometrics goods and services will be in the form of **fewer required tests**, a design for reusable results, open and well defined testing methods, and cost savings on the part of government implementers as well as a reduced testing cost burden to the product suppliers.”

*Keeping an eye on the target*

# What is the Scope of BITES?

- central repository to list successful biometric technology test results
  - including pointers to externally-managed and agency-specific test methodologies and product lists
  - limited to biometric products
- governance structure (to control contents)
- oversight and management of testing-related documentation and activities
  - lead the development of unified, USG-desired, conformance, performance, interoperability, and quality test methodologies
- used for information sharing and acquisition by federal government agencies

*Don't bite off more than you can chew*

# What is the Purpose of BITES?

- Facilitate the advancements of biometric technology at a lower cost to the USG
- Capability to collaborate and reuse the results of tests
- Launch an electronic repository for collaboration
- Develop a test framework that ties requirement and approved test methods together
- Establish a governance structure represented by interagency members
- Establish a focal point for dissemination of biometric testing information to the public

# What are the Benefits of BITES?

- Cost avoidance for both government and product suppliers by listing of registered testing results from testing performed by a credible source (third or second party, unbiased, accredited)
- Improved program testing efficiency and thoroughness (particularly for newly developed programs, leveraging the prior work of others)
- Increased interoperability between USG agencies and programs
- Provision of open or controlled access to testing documentation for use by the general public, suppliers, acquisition, academia, test labs through the establishment of a web-based mechanism
- Uniformity of test methods to support a repository to identify areas where new/additional specific test methods (e.g. Conformance, Performance, Quality, Interoperability) are necessary
- Increased confidence in the testing activities provided by accredited testing laboratories
- Assist law enforcement in satisfying the federal rules of evidence (the Daubert factors)

*For all the right reasons...*

# BITES Next Steps?

- USG team creating foundational documents
  - Charter
  - Project Plan and Roadmap
  - Business Plan
  - Governance and Policy Plan
- Establishing a web-based project portal for the use by general public, suppliers, acquisition, academia, test laboratories.

*One step at a time...*

# Thanks for your attention

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