

HSPD-24 and the Registry of Standards

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Recognition of the Importance of Standards

- ▶ 18) The Director of the Office of Science and Technology Policy, through the National Science and Technology Council (NSTC), shall coordinate executive branch biometric science and technology policy, including biometric standards and necessary research, development, and conformance testing programs. **Recommended executive branch biometric standards are contained in the *Registry of United States Government Recommended Biometric Standards* and shall be updated via the NSTC Subcommittee on Biometrics and Identity Management.**





Registry of USG Recommended Biometric Standards

<http://www.biometrics.gov/Standards>

***Standards & Conformity Assessment
Working Group (SCA WG)
of the NSTC Subcommittee on Biometrics
and Identity Management***

Chair, Michael D. Hogan
National Institute of Standards and Technology



Your Success Depends on Knowing

- ▶ What biometric standards have been adopted for USG-wide use?
- ▶ What biometric standards will be adopted for USG-wide use?
- ▶ What kinds of USG biometric testing are required?
- ▶ What kinds of USG biometric testing will be required?

Types of Standards in the Registry

- ▶ biometric data collection, storage, and exchange standards
- ▶ biometric transmission profiles
- ▶ biometric identity credentialing profiles
- ▶ biometric technical interface standards
- ▶ biometric conformance testing methodology standards
- ▶ biometric performance testing methodology standards

The *Registry* Evolves

- ▶ As new standards, and revisions to existing standards, are approved by the standards developers, they will be evaluated for USG-wide use and may be added to the Registry.
- ▶ Two biometric modalities are clear priorities for addition to the Registry:
 - ▶ Voice
 - ▶ DNA
- ▶ Addition of ANSI/NIST-ITL 2-2008



Standards and Conformity Assessment

- ▶ ***Standards***, often, specify requirements.
- ▶ ***Conformity Assessment (CA)***
determines whether a product, service or system has fulfilled all of those requirements.

Conformity Assessment - Testing

- ▶ ***Conformance testing*** - process of checking, via test assertions, whether an implementation faithfully implements the standard or profile.
- ▶ ***Performance testing*** - measures the performance characteristics of an implementation such as system error rates, throughput, or responsiveness, under various conditions.

Conformity Assessment

▶ Focus:

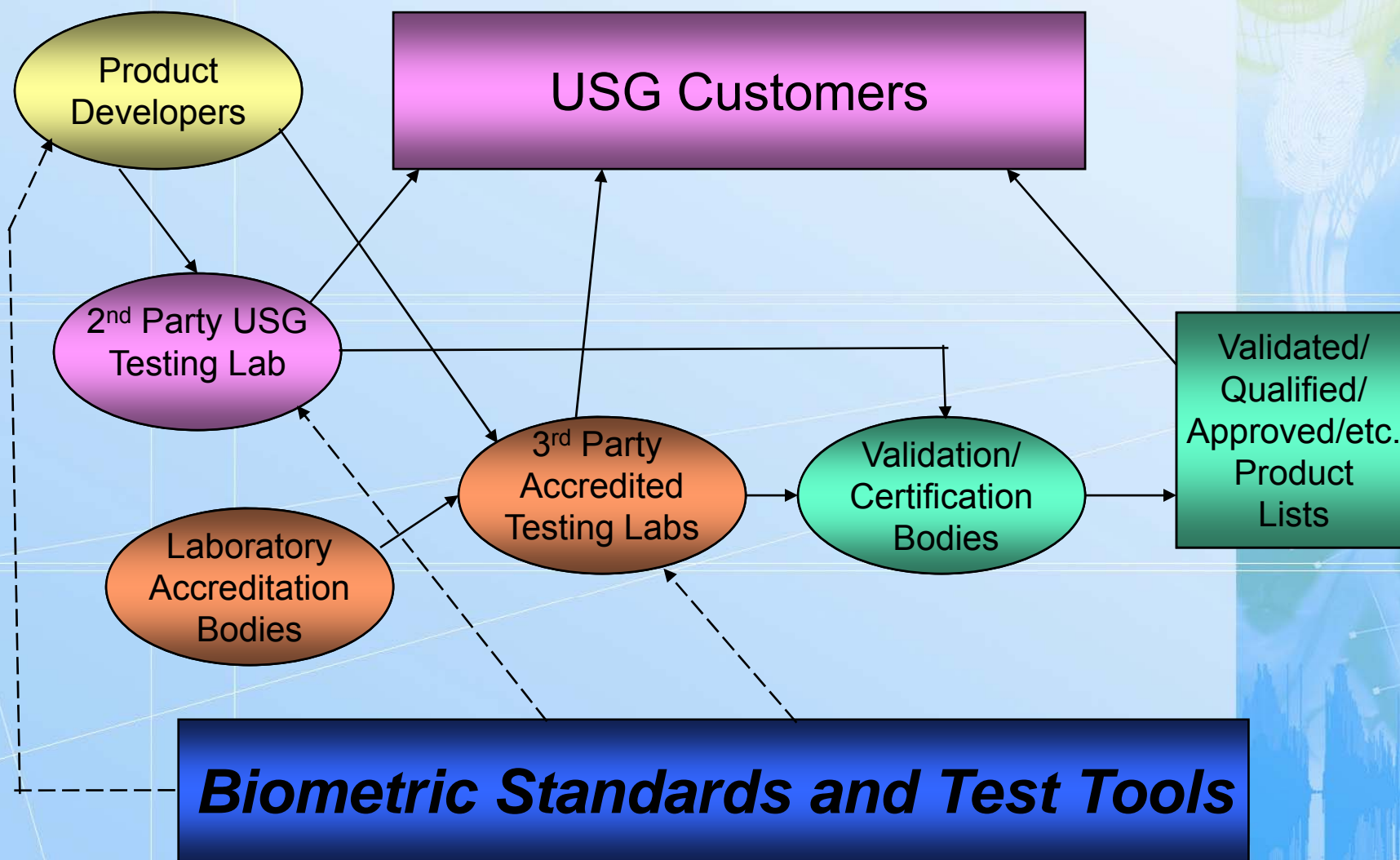
- ▶ development of test tools for the recommended standards;
- ▶ 2nd party testing;
- ▶ accreditation of 3rd party testing laboratories;
- ▶ certification of test results.

▶ Terms:

- ▶ *first party* – seller or manufacturer;
- ▶ *second party* – purchaser or user;
- ▶ *third party* – an independent entity that has no interest in transactions between the 1st and 2nd parties.



Robust Standards & CA Infrastructure



Conformance Test Tools for Biometric Standards

- ▶ 2005 – DoD and NIST release two cross tested test tools for BioAPI (INCITS 358-2002).
 - ▶ http://www.itl.nist.gov/div893/biometrics/BioAPI_CTS/index.htm
 - ▶ <http://www.biometrics.dod.mil/CurrentInitiatives/Standards/TestingTools.aspx>
- ▶ 2006 – NIST establishes a Minutiae Exchange Interoperability Test for INCITS 378-2004.
 - ▶ <http://fingerprint.nist.gov/minex/>
- ▶ August 2008 - NIST releases a conformance testing architecture and test tool for CBEFF Patron Format A (specified in INCITS 398-2008).
 - ▶ http://www.itl.nist.gov/div893/biometrics/CBEFF_PFA_CTS/index.htm

Tests Underway

- ▶ IREX08
- ▶ Multi-Biometrics Test and Evaluation
- ▶ Multiple Biometrics Grand Challenge



NIST Iris Exchange (IREX08) Test

- » IREX objectives
 - » Support development of interoperable iris images
 - » Immediately ISO/IEC 19794-6:20XX
 - » Secondly ANSI/NIST ITL 1+2:20YY Type 17
 - » Establish iris images as the primary interchange format (not templates)
 - » Push developers into implementing ISO standard implementations
 - » Test conformance
 - » Test performance
 - » Test interoperability
 - » Establish compact image formats
 - » Storage on smart cards (e.g. PIV)
 - » Bandwidth limited networks (e.g. ship-to-shore, mobile)
 - » Evaluate state-of-the-art iris recognition performance
- » IREX contact point
 - » <http://iris.nist.gov/irex> patrick.grother@nist.gov

Multi-Biometrics Test and Evaluation (MBTE)

- » MBTE objectives: Evaluate the potential for iris and/or facial biometrics for use in pedestrian and maritime scenarios of exit from the U.S.

- » MBTE steps:
 - » Evaluate quality of face and iris images captured simultaneously under a variety of scenarios
 - » Evaluate cross-camera interoperability for iris images applied to various matchers
 - » Evaluate human factors impact on quality of images and FTA rate
 - » Determine factors indicating need for multi-modal fusion
 - » Evaluate methods for fusing multi-modal information in the specified operational scenarios

- » MBTE contact points
- » william.graves@dhs.gov
- » patrick.grother@nist.gov



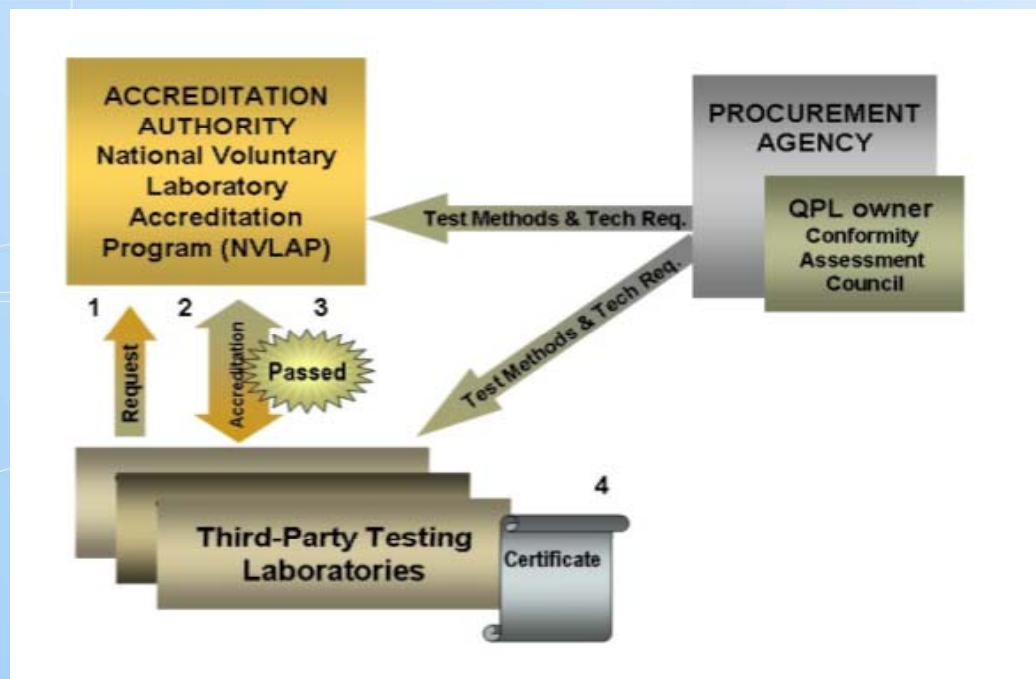
Multi-Biometric Evaluation (MBE) 2009

- ▶ Follow-up to the Multiple-Biometrics Grand Challenge 2008
- ▶ Tests to be performed by NIST using code provided by developers
 - ▶ Run against larger, sequestered data sets
 - ▶ Summer 2009 Staggered start of three tracks
 - Portal and Video
 - Executable
 - Based on FRVT 2006, ICE 2006, and MBGC
 - Still face track
 - Operational data
 - Submission of SDKs will be an option
- ▶ MBE Point of contact:
 - ▶ jonathan.phillips@nist.gov



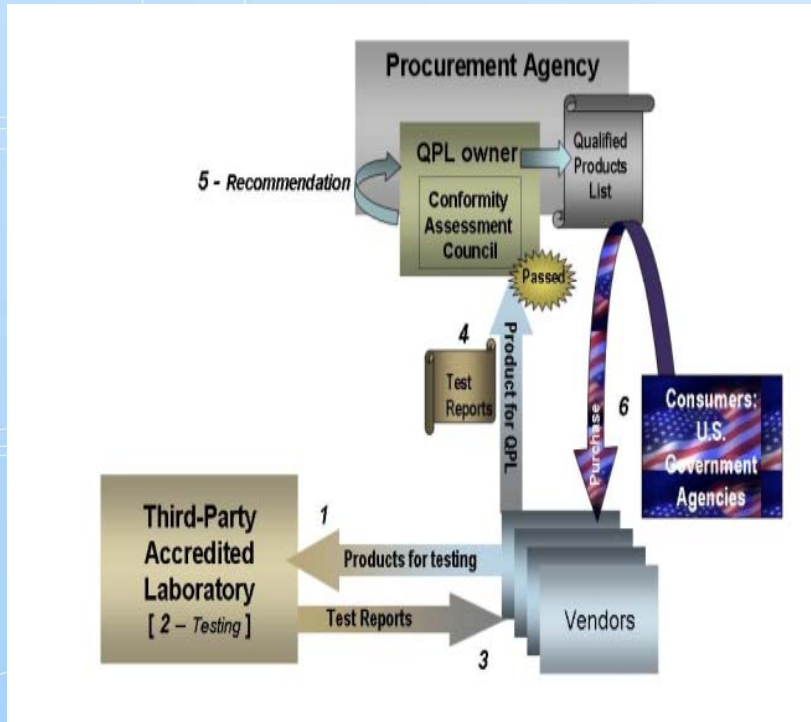
Certified 3rd Party Product Testing Example

- ▶ **NIST HANDBOOK 150-25 2008 Edition**
 - ▶ National Voluntary Laboratory Accreditation Program
 - ▶ http://ts.nist.gov/Standards/Accreditation/upload/NIST-Handbook-150-25_public_draft_v1_09-18-2008.pdf

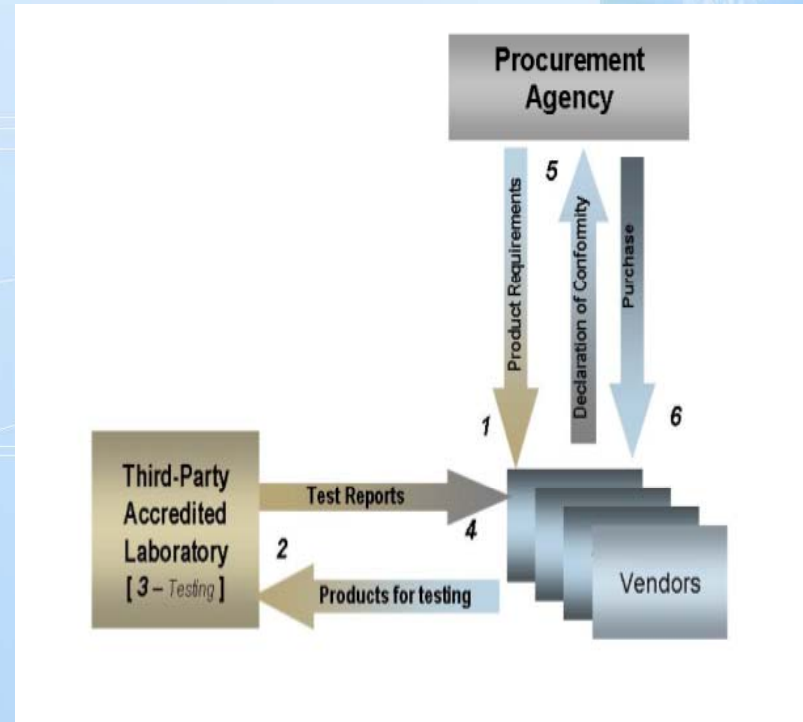


3rd Party Alternative Approaches

Maintained Qualified Product LIST (QPL)



No QPL: based on Supplier's Declaration of Conformity



Qualified Product Lists (QPLs) of Biometric Products

- ▶ **FBI's Approved Product List of Fingerprint Scanners and Card Readers**
First party testing of equipment with third party (FBI approved lab) analysis of output
General info, Appendix F in EBTS: <http://www.fbibiospecs.org/fbibiometric/ebts.html>
Products on QPL: <http://www.fbibiospecs.org/fbibiometric/iafis.html>
- ▶ **TSA QPL for Biometric Airport Access Control Systems**
Third party testing (TSA approved lab - transitioning to NVLAP certified labs)
General info: http://www.tsa.gov/assets/pdf/biometrics_guidance.pdf
Products on QPL: <http://www.biometricgroup.com/QPL/>
- ▶ **Approved Product List for FIPS 201(PIV)**
First, second (US Gov't -- NIST) or third party (NVLAP certified lab) testing
(different procedures for various products):
General info: <http://fips201ep.cio.gov/obtainlogin.php>
Products on QPL: <http://fips201ep.cio.gov/apl.php>

Present Situation

- ▶ Groundbreaking USG-wide standards selection process is now in place.
- ▶ Augmenting the existing USG Conformity Assessment capabilities in support of the recommended standards is now underway.
- ▶ Registry will be updated as new standards emerge or older ones become obsolete



**National Institute of
Standards and Technology**

NIST

...working with industry to foster innovation, trade, security and jobs



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A handwritten signature in black ink that reads "Brad". The signature is written in a cursive, flowing style on a white rectangular background.