



Biometric Standards

ANSI Homeland Security Standards Panel

Ninth Annual Plenary Meeting

Will Graves, DHS/US-VISIT

November 9, 2010



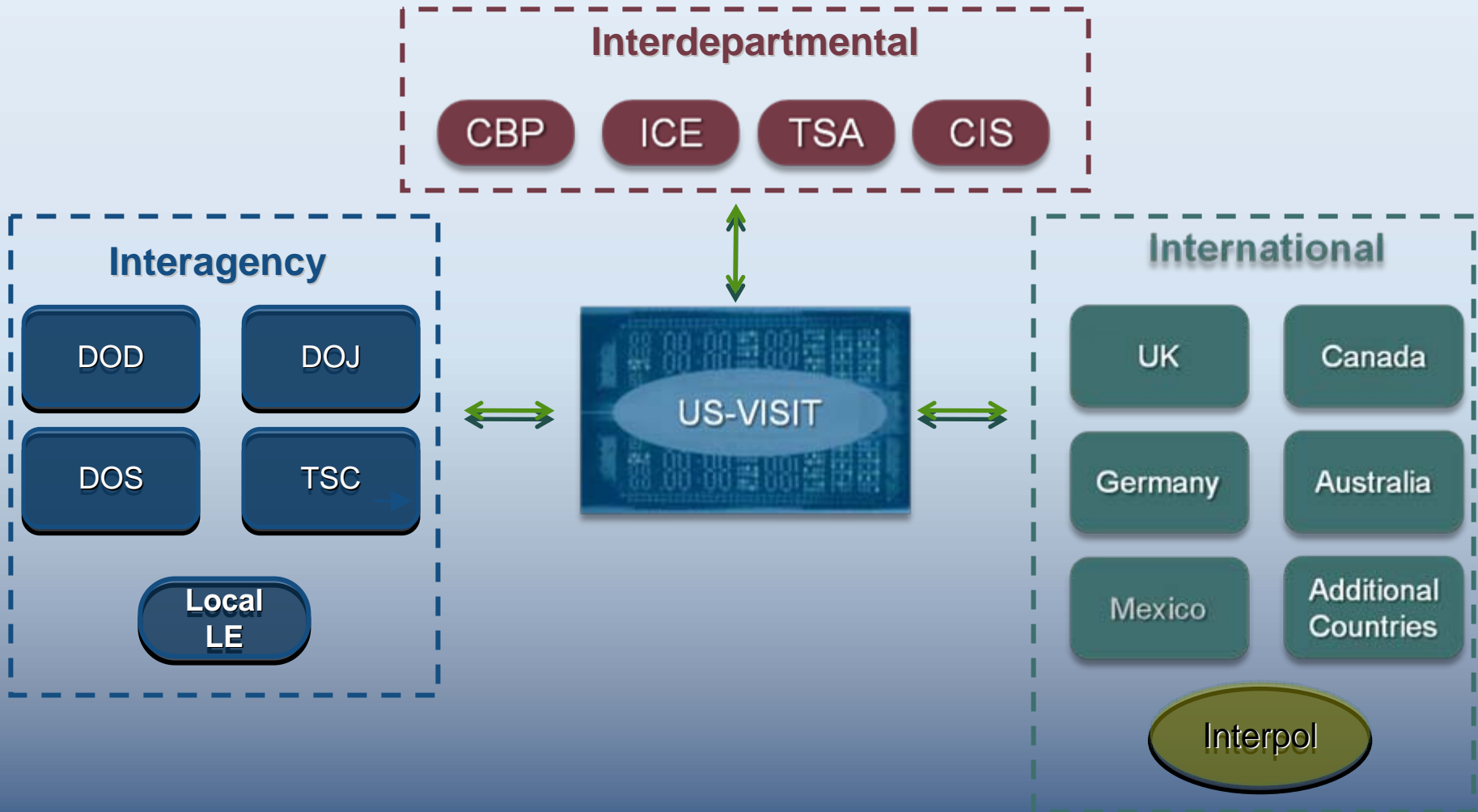
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Users of US-VISIT's Biometric Identification and Analysis Services



US-VISIT Stakeholders

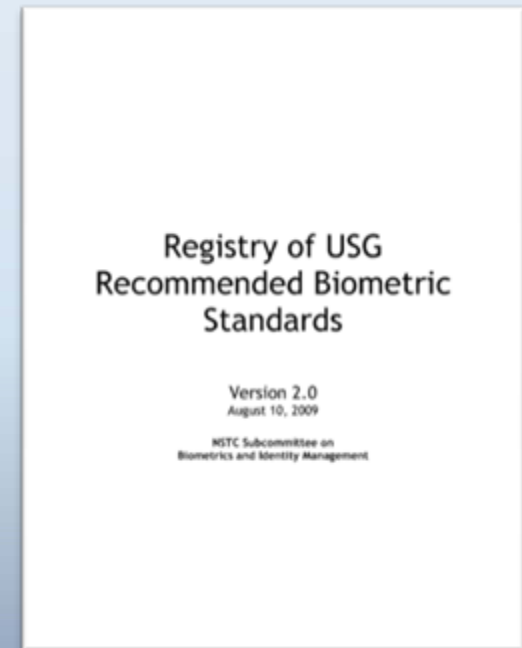


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Standards

A document, established by consensus and approved by a recognized body, that provides rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context¹



¹*Registry of USG Recommended Biometric Standards, Version 2.0, August 2009)*



Why Biometric Standards?

- Ensure consistency in data definition
 - Meaning of the data
 - Usefulness of the data
- Enable data to be collected and used by different types of systems, and from multiple vendors
- Facilitate interoperability
- Reduce the cost of development and maintenance
- Enable testing of biometric system performance, as well as conformance to biometric standards



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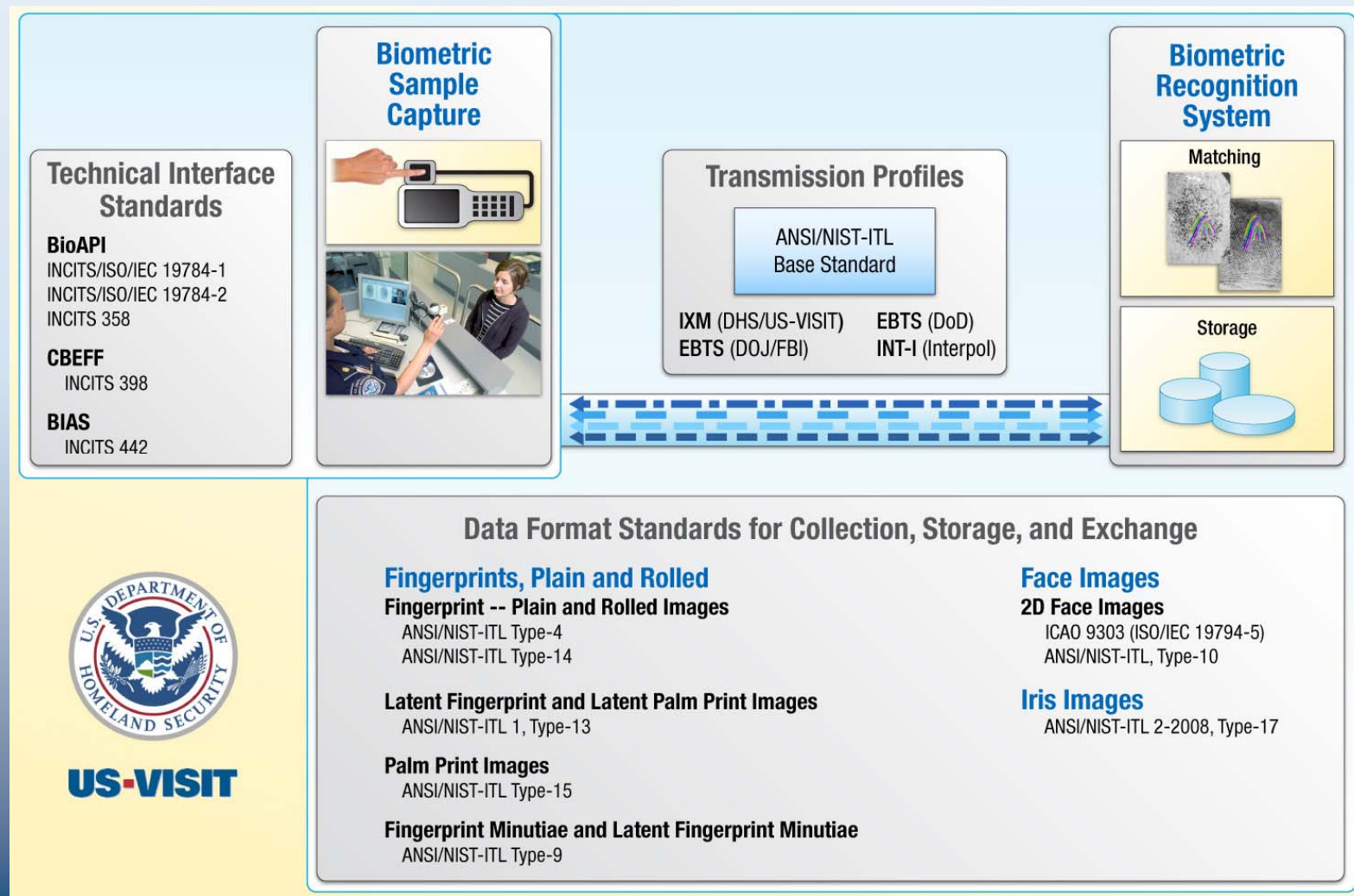
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Types of Biometric Standards

Type of Standard	Why Needed?
Data Interchange Technical Interface	Necessary to achieve full data interchange and interoperability in a non-proprietary format
Profiles	Define specific values, conditions, options described in relevant base standards to achieve specific requirements
Testing and Reporting	Specify and test the performance of identification and verification devices, algorithms, and systems
Conformance Testing	Verify vendor claims that their products conform to standards
Cross-jurisdictional and Societal Issues	Address study and standardization of technical solutions to societal aspects of biometric implementations excluding specifications for government applications.



Biometric Standards: Implementation

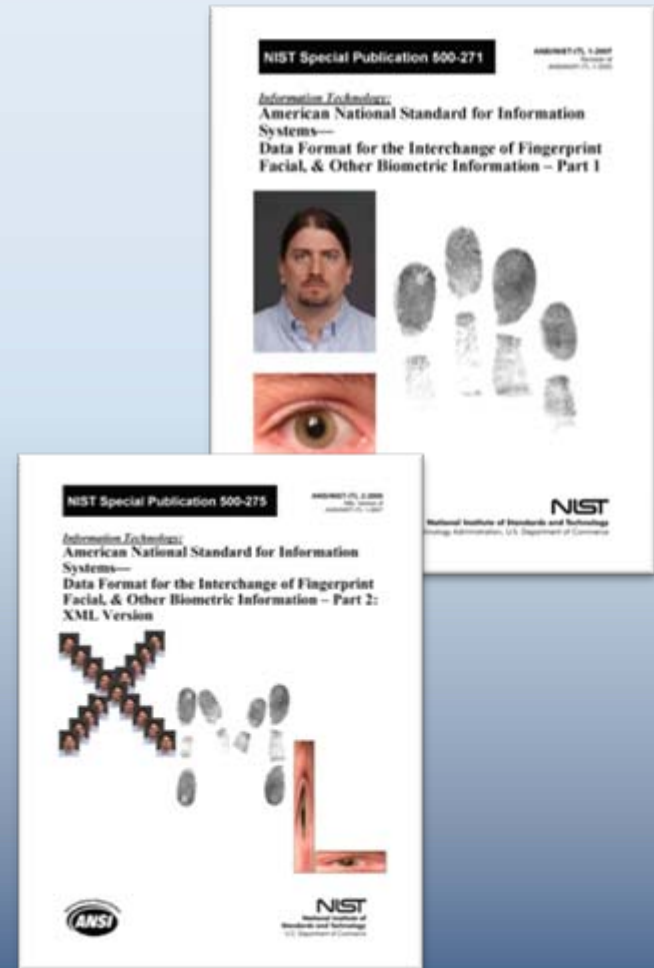


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Base Standard

A fundamental standard with elements that contain options. Different applications (e.g., criminal identification, traveler authentication) may require certain values for the optional elements. These options and conditions are defined in a 'biometric profile'



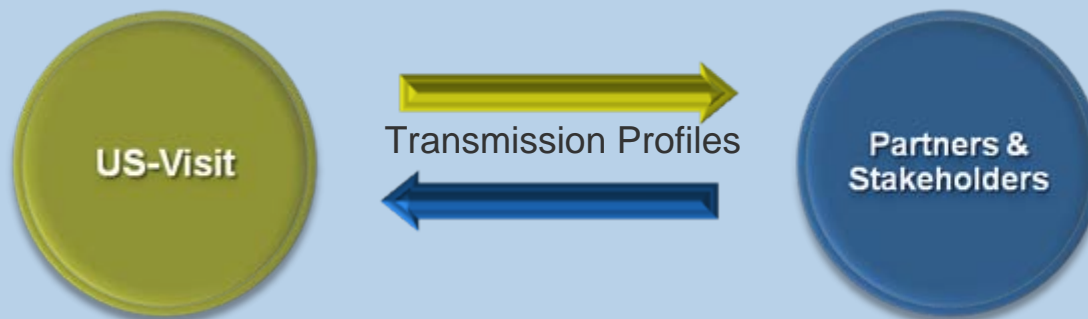
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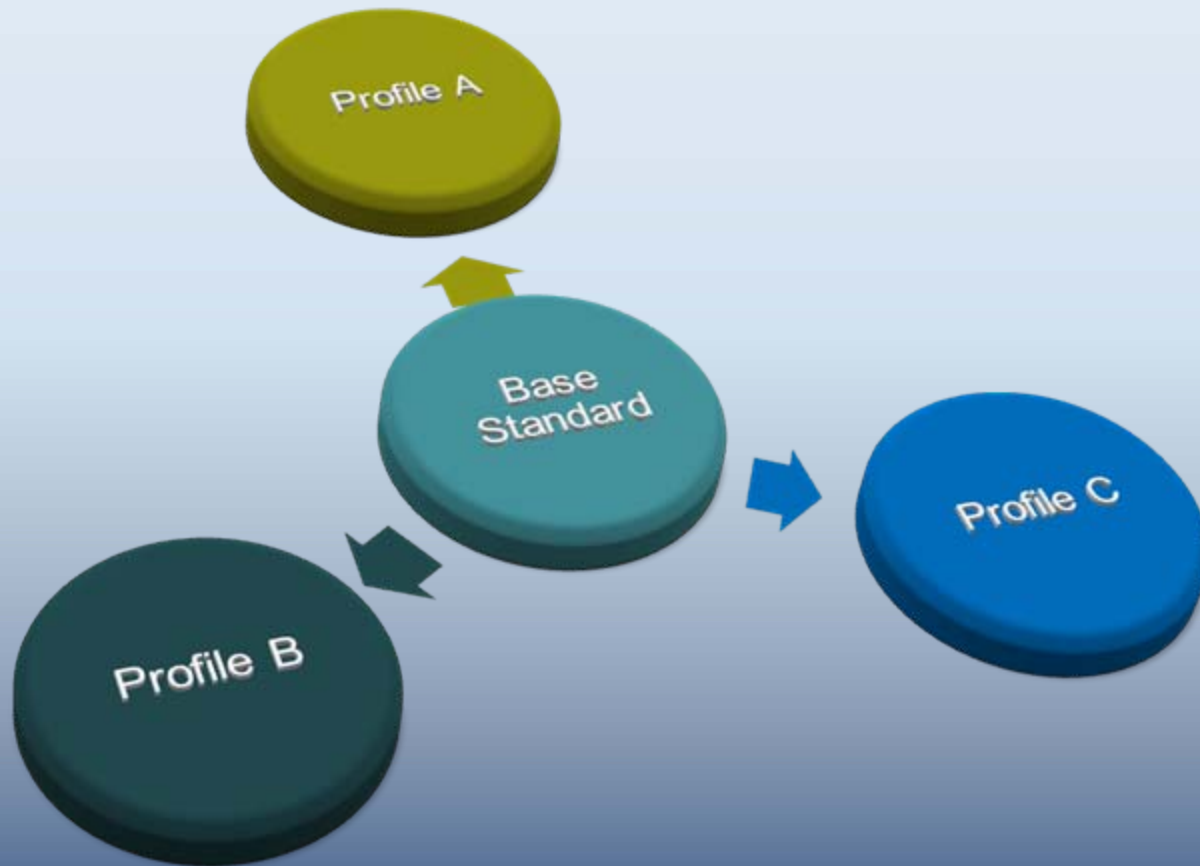
Biometric Profiles

Biometric [Application] Profile – a conforming subset or combination of base standards used to effect specific biometric functions. Defines specific values or conditions from the range of options described in the base standards to support the interchange of data between applications and system interoperability.

Biometric Transmission Profiles define the sender and receiver specification for electronic communications between systems



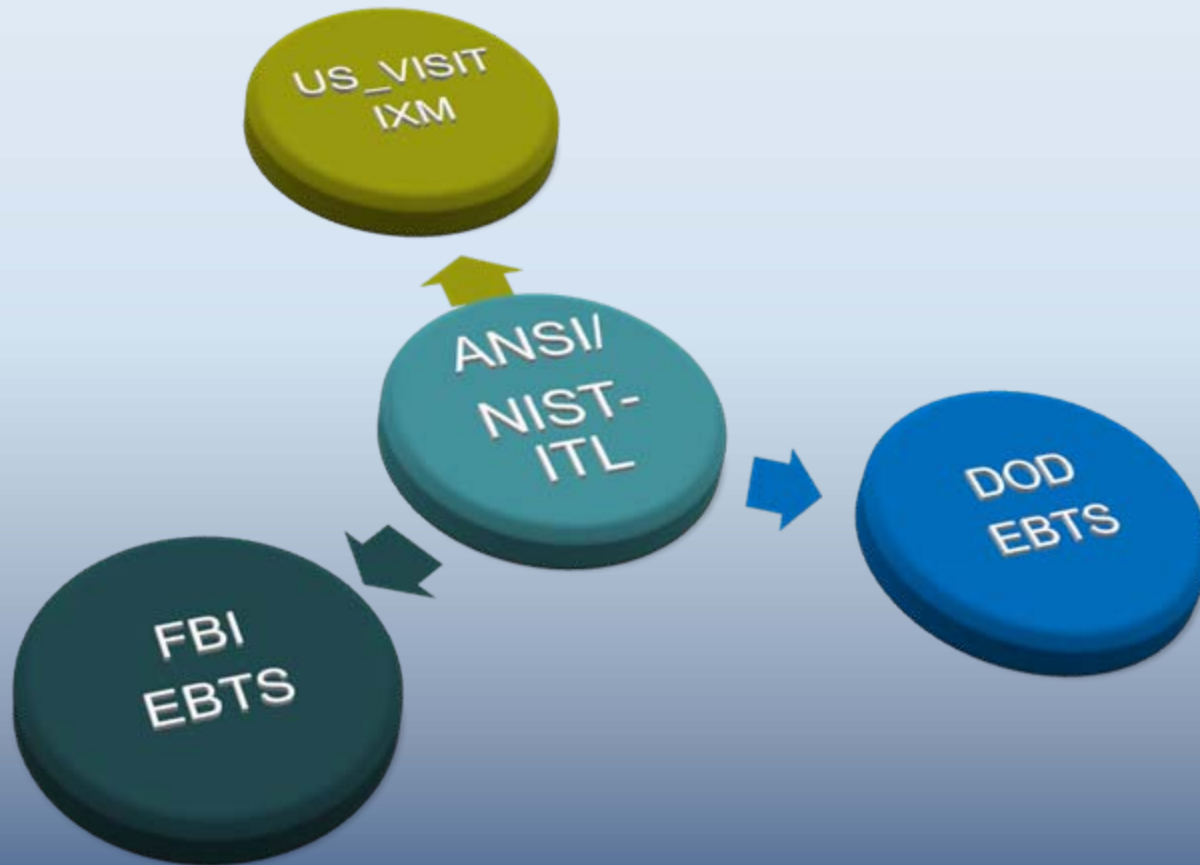
Transmission Profiles: Common Base



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Transmission Profiles: Common Base



Locations of systems with the ANSI/NIST-ITL standard installed for data transfer (known to NIST)



Blue: National and International System Use
Red: State / Provincial / Local System Use

Source: NIST



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IDENT Exchange Message - IXM

IXM is the IDENT XML biometric standard messaging format for interacting with US-VISIT IDENT Biometric Services

GJXDM/NIEM

- GJXDM (Global Justice) based
- Some NIEM elements
- Fully backward compatible

5.0

- Incorporate new modalities (palmpoint, face, iris)

5.5

NIEM

- Add new services
- Fully NIEM conformant

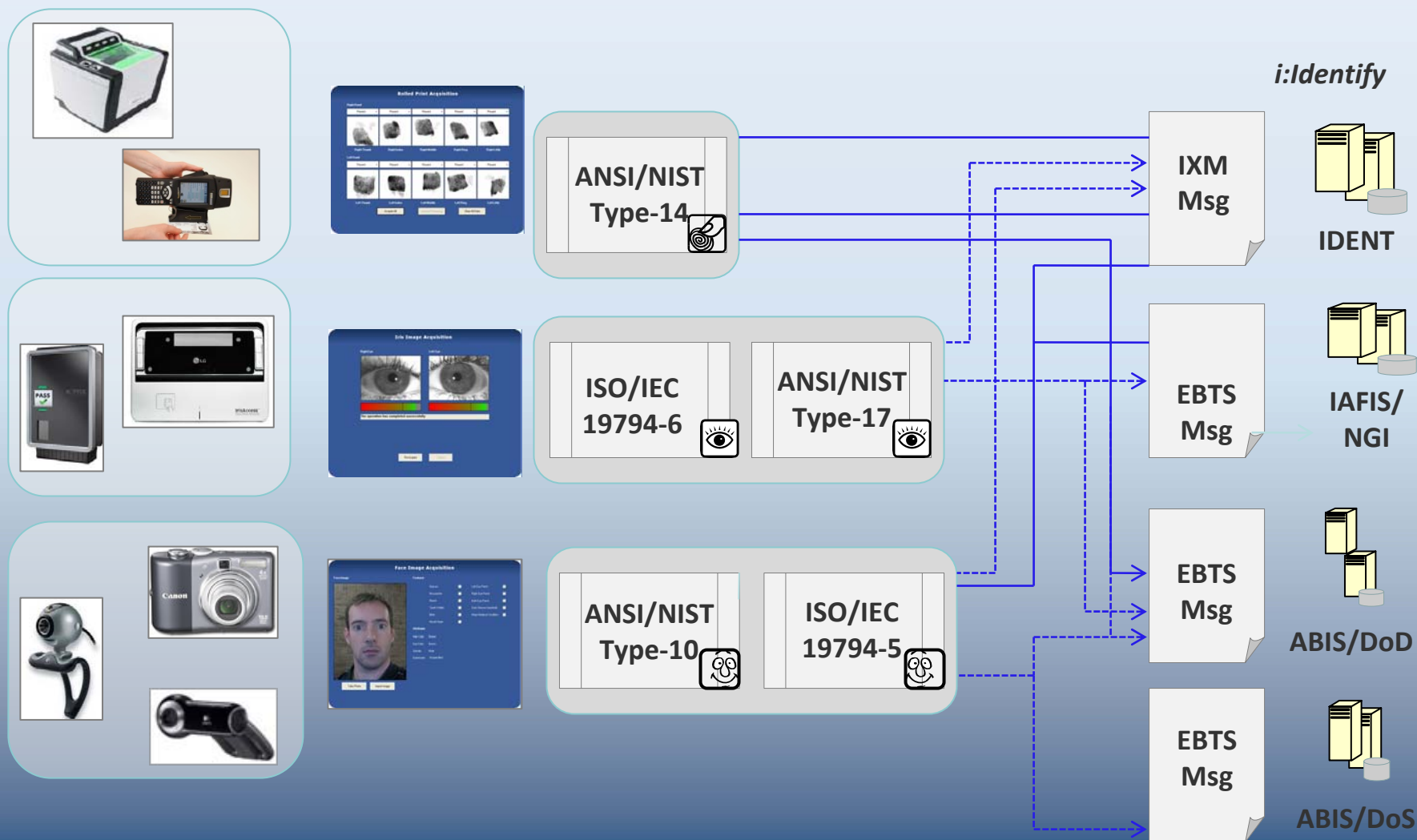
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Multi-modal biometrics interoperability



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US-VISIT Biometric Standards

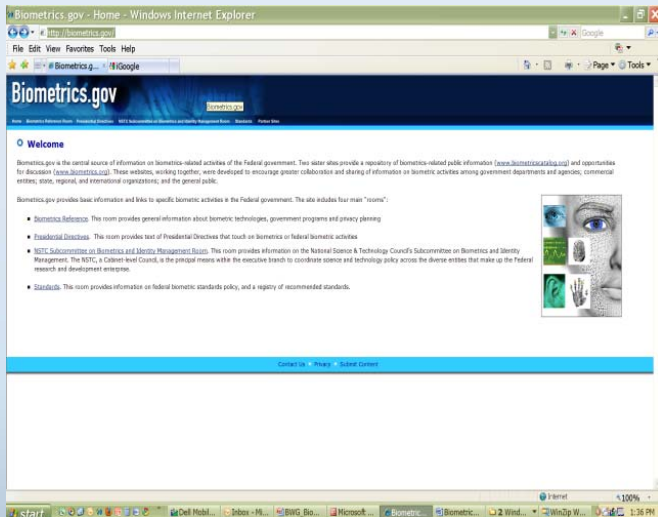
- Adoption and implementation of US-VISIT biometric standards
- IDENT requirements for transmission profiles; data interchange formats (fingerprint, palmprint, face and iris); data quality standards; NIST Mobile ID Best Practices
- Standards to achieve interoperability with
 - Federal stakeholders
 - Foreign countries (per agreements)



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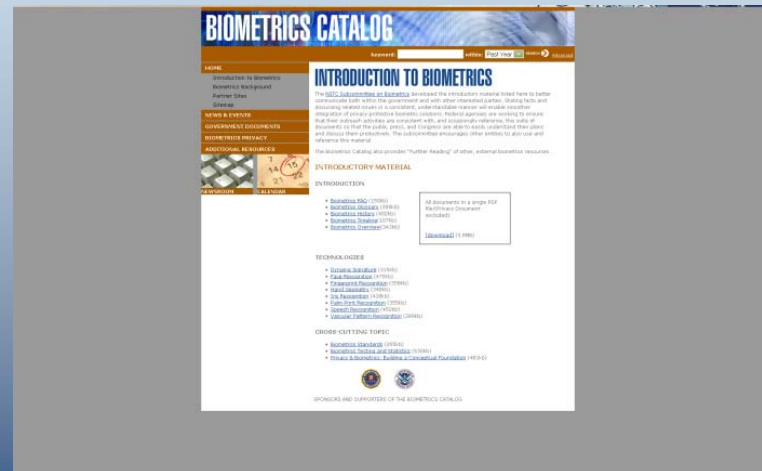
US Government Biometrics



Biometrics.gov Source of biometrics-related activities of the US Federal government to encourage collaboration and information sharing

Biometrics.gov/Standards Federal policies and guidance, *Registry of USG Recommended Biometric Standards*, posting of agency transmission specifications (e.g. for US-VISIT and DOD)

Biometrics Catalog Outreach to provide information to government and the public (<http://www.biometricscatalog.org/>)



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