



**Biometrics Task Force
Biometric Standards Development
Status Update
January - March 2009
Version 1.0**

**BTF Biometric Standards Development Status Update
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1. Summary

This document contains a comprehensive update of the adoption and development status of biometric standards of high priority to the DoD. The first table in this document provides the status of approved and proposed national and international biometric standards that are either included or are planned for inclusion in the DoD Defense Information Technology Standards Registry (DISR). This document also lists the current status of all biometric standards development projects within various biometric standards development bodies and committees.

This document will be updated on a regular basis by the Biometrics Task Force (BTF) Standards Branch, as the information contained herein changes frequently. The document is intended for distribution within the DoD Biometric Standards Working Group (BSWG). All inquiries regarding this document and requests for additional information should be submitted to its editors.

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2. Biometric Standards Adoption Progress

The following table displays the status of approved and proposed national and international biometric standards that are either included or are planned for inclusion in the DoD Defense Information Technology Standards Registry (DISR). Submission of standards to the DISR is performed through the established change request (CR) process. Each CR is circulated to BSWG members for their review, comment, and vote.

Proposed Biometric Standards for DISR Baseline 09-0.2

The next DISR Baseline 09-0.2, to be published on 20 July 2009, may include the following 17 CR to biometric standards, of which 11 are new biometric standards and 6 are modifications in-status to existing biometric standards.

Standards Category	Standard Name	Description	Proposed DISR Status
Technical Interfaces	ISO/IEC Project 19784-1: BioAPI – Biometric Application Programming Interface -- Part 1: BioAPI specification	The functionality specified in this amendment enables an application to control the display of graphics at enrollment, verification, and identification as an alternative to using the graphic user interface (GUI) provided by biometric service providers (BSPs). It is expected to better meet the needs of users of biometric applications who wish to have full control of the user interface during enrollment, verification, and identification.	From Emerging to Mandated
	ISO/IEC Project 24709-1: Conformance Testing for BioAPI – Part 1: Methods and Procedures	This international standard defines a conformance testing methodology for BioAPI as specified in ISO 19784-1. It specifies three conformance testing models that enable conformance testing of each component of BioAPI (an application, a framework, or a BSP). It also specifies a test assertion language used for the definition of test assertions. Actual test assertions for each of the BioAPIs are defined in subsequent parts of this international standard.	From Emerging to Mandated
	ISO/IEC Project 24709-2: Conformance Testing for BioAPI – Part 2: Test Assertions for Biometric Service Providers	This part of ISO/IEC 24709 defines a number of test assertions written in the assertion language specified in ISO/IEC 24709-1. These assertions enable a user of this part of ISO/IEC 24709 (such as a testing laboratory) to test the conformance to ISO/IEC 19784-1 (BioAPI 2.0) of any BSP that claims to be a conforming implementation of that international standard.	From Emerging to Mandated

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Standards Category	Standard Name	Description	Proposed DISR Status
	ANSI INCITS 398-2008 (INCITS Project 1622-R): Common Biometric Exchange Formats Framework (CBEFF)	This revision to ANSI INCITS 398-2005 corrects a number of alleged technical errors and contains other modifications noted by users of the standard, clarifications to further help users and developers, and new features such as nested data structures and new/redefined fields.	From Published to Emerging
Performance Testing	ISO/IEC 19795-1: Biometric Performance Testing and Reporting – Part 1: Principles and Framework	This part of ISO/IEC 19795 is applicable to empirical performance testing of biometric systems and algorithms through analysis of the matching scores and decisions output by the system without detailed knowledge of the system’s algorithms or the underlying distribution of biometric characteristics in the population of interest.	From Published to Emerging
	ISO/IEC 19795-2: Biometric Performance Testing and Reporting – Part 2: Biometric Testing Methodologies	This part of ISO/IEC 19795 provides requirements and recommendations on data collection, analysis, and reporting specific to two primary types of evaluation: technology and scenario. It specifies requirements for development and descriptions of protocols for technology and scenario evaluations.	From Published to Emerging
Application Profiles	ISO/IEC 24713-1: Biometric Profiles for Interoperability and Data Interchange – Part 1: Biometric System Reference Architecture	This part of ISO/IEC 24713 is intended to form the reference architecture part of the multipart standard on biometric profiles for interoperability and data interchange. It will describe a schema for the use of a number of biometric standards. This part of ISO/IEC 24713 is to be used as a reference guide for the implementation of a generic biometric system or a profile-standardized system.	From Published to Emerging
Face	ISO/IEC 19794-5:2005/Amd 1: Biometric Data Interchange Formats – Part 5: Face Image Data Conditions for taking photographs for face image data	This amendment provides expert guidance for the design of photographic studios and photo booths and, as such, it supplements the information provided in the standard and Annex A. It also provides guidance on printing quality and on scanning printed face photographs.	From Emerging to Mandated
	ISO/IEC 19794-5:2005/Cor.3:2007 Information Technology – Biometric Data Interchange Format – Part 5: Face Image Data – Technical Corrigendum 2	Contains resolution of several defects found in the base standard.	From Published to Emerging

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Standards Category	Standard Name	Description	Proposed DISR Status
Fingerprint Image	ISO/IEC 19794-4 Biometric Data Interchange Formats – Part 4: Finger Image Data	This international standard specifies a data record interchange format for storing, recording, and transmitting the information from one or more finger or palm image area within an ISO/IEC 19785-1 CBEFF data structure. This can be used for the exchange and comparison of finger image data.	From Emerging to Mandated
Multi-Biometrics and Data Interchange Frameworks	ANSI INCITS 423.1-2008: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 1: Generalized Conformance Testing Methodology	This part of the multi-part standard on data interchange formats conformance testing specifies the concepts, test types, and test methodologies for conformance testing of biometric systems claiming conformance to data interchange format standards produced by INCITS M1.	From Published to Emerging
Fingerprint Template	ISO/IEC 19794-2 Biometric Data Interchange Formats – Part 2: Finger Minutiae Data	This international standard specifies a concept and data formats for representation of fingerprints using the fundamental notion of minutiae. It is generic in that it may be applied and used in a wide range of application areas where automated fingerprint recognition is involved. ISO/IEC 19794-2:2005 contains definitions of relevant terms, a description of how minutiae shall be determined, data formats for containing the data for both general use and for use with cards, and conformance information.	From Emerging to Mandated
	ANSI INCITS 423.2-2008: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 2: Fingerprint Minutiae Conformance Testing Methodology	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ANSI INCITS 378-2004 standard.	From Published to Emerging
Web Services	ANSI INCITS 442-2008: Biometric Identity Assurance Services (BIAS)	This project defines biometric services used for identity assurance and is invoked over a services-based framework. It is intended to provide a generic set of biometric (and related) functions and associated data definitions to allow remote access to biometric services.	From Published to Emerging

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Standards Category	Standard Name	Description	Proposed DISR Status
Transmission	IDENT eXchange Messaging (IXM)	This document provides detailed information on messaging operation and steps required to create an interface for external users to interact with US-VISIT/IDENT applications.	From Published to Emerging
	TWPDES v1.2b	This standard provides a data exchange format with biometrics and XML for terrorist watch list data that supports the Department of State, DOJ intelligence community under the Director of Central Intelligence, and DHS. The purpose is to develop and maintain, to the extent permissible by law, the most thorough, accurate, and current information possible about individuals known or appropriately suspected to be or have been involved in activities constituting, in preparation for, in aid of, or related to terrorism.	From Published to Emerging
	FBI Electronic Biometric Transmission Specification (v8.1)	The FBI's EBTS defines FBI-specific requirements for an ANSI/NIST ITL 1-2007 implementation to which agencies must adhere when electronically communicating with the FBI's IAFIS. The scope of the EBTS has been expanded over previous versions to include additional biometric modalities (e.g., palm print, face, and iris) in recognition of the rapidly developing biometric identification industry.	From Published to Emerging

Biometric Standards in DISR Baseline 09-0.1

The current DISR Baseline 09-0.1, to be published 20 March 2009, should include the following 29 biometric standards and the retirement of 2 biometric standards.

Standards Category	Standard Name	Description	DISR Status
Transmission	DoD Electronic Biometric Transmission Specification (EBTS) (v1.2)	This specification is an extension of the FBI's EBTS that includes transaction types and codes that support requirements for DoD encounters and detainment circumstances. The DoD EBTS defines the transmission of biometric samples for face, fingerprint, and iris modalities. This standard is intended for those applications requiring the exchange of biometric samples and related biographic and contextual data with DoD repositories.	Mandated

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Standards Category	Standard Name	Description	DISR Status
	FBI Electronic Biometric Transmission Specification (v8.001)	The FBI's EBTS defines FBI-specific requirements for an ANSI/NIST ITL 1-2007 implementation to which agencies must adhere when electronically communicating with the FBI's IAFIS. The scope of the EBTS has been expanded over previous versions to include additional biometric modalities (<i>e.g.</i> , palm print, face, and iris) in recognition of the rapidly developing biometric identification industry.	Emerging
	FBI Electronic Fingerprint Transmission Specification (EFTS) (v7.1)	The purpose of this specification is to specify certain requirements to which agencies must adhere in order to communicate electronically with the FBI's IAFIS. This specification is based on ANSI/NIST ITL 1-2000 and covers IAFIS electronic transmissions involving fingerprints.	Information Guidance
	Terrorist Watchlist Person Data Exchange (TWPDES)	This standard provides a data exchange format for terrorist watch list data that supports the DOS, DOJ, intelligence community under the Director of Central Intelligence, and DHS. The purpose is to develop and maintain, to the extent permissible by law, the most thorough, accurate, and current information possible about individuals known or appropriately suspected to be or have been involved in activities constituting, in preparation for, in aid of, or related to terrorism.	Mandated
Multimodal	ANSI/NIST ITL 1-2000 Data Format for the Interchange of Fingerprint, Facial, & Scar Mark & Tattoo (SMT) Information	This standard defines the content, format, and units of measurement for the exchange of fingerprint, palm print, facial/mug shot, and SMT full-image information that may be useful in identifying a subject.	Mandated
Fingerprint Image	ISO/IEC 19794-4 Biometric Data Interchange Formats – Part 4: Finger Image Data	This international standard specifies a data record interchange format for storing, recording, and transmitting the information from one or more finger or palm image area within an ISO/IEC 19785-1 CBEFF data structure. This can be used for the exchange and comparison of finger image data.	Emerging
	ANSI INCITS 381-2004 Finger Image-Based Data Interchange Format	This standard specifies an interchange format for the exchange of image-based fingerprint and palm print recognition data. It defines the content, format, and units of measurement for such information. This standard is intended for those identification and verification applications that require the use of raw or processed image data containing detailed pixel information.	Mandated

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Standards Category	Standard Name	Description	DISR Status
Fingerprint Template	ANSI INCITS 377-2004 Finger Pattern Based Interchange Format	This standard specifies an interchange format for the exchange of pattern-based fingerprint recognition data. It describes the conversion of a raw fingerprint image to a cropped and down-sampled finger pattern followed by the cellular representation of the finger pattern image to create the finger-pattern interchange data.	Mandated
	ANSI INCITS 378-2004 Finger Minutiae Format for Data Interchange	This standard defines a method of representing fingerprint information using the concept of minutiae. It defines the placement of the minutiae on a fingerprint, a record format for containing the minutiae data, and optional extensions for ridge count and core/delta information.	Mandated
	ISO/IEC 19794-2 Biometric Data Interchange Formats – Part 2: Finger Minutiae Data	This international standard specifies a concept and data formats for representation of fingerprints using the fundamental notion of minutiae. It is generic in that it may be applied and used in a wide range of application areas where automated fingerprint recognition is involved. ISO/IEC 19794-2:2005 contains definitions of relevant terms, a description of how minutiae shall be determined, data formats for containing the data for both general use and for use with cards, and conformance information.	Emerging
Face	ISO/IEC 19794-5 w/ Amd 1:2007 Biometric Data Interchange Formats – Part 5: Face Image Data	This international standard specifies scene, photographic, digitization, and format requirements for images of faces to be used in the context of both human verification and computer-automated recognition. The format is designed to allow for the specification of visible information discernible by an observer pertaining to the face, such as gender, pose, and eye color.	Emerging
	ANSI INCITS 385-2004 Face Recognition Format for Data Interchange	This standard specifies definitions of photographic environment, subject pose, focus, etc. properties, digital image attributes, and a face interchange format for relevant applications, including human examination and computer-automated face recognition.	Mandated
Iris	ISO/IEC 19794-6 Biometric Data Interchange Formats – Part 6: Iris Image Data	This international standard specifies two alternative image interchange formats for biometric authentication systems that use iris recognition. The first is based on a rectilinear image storage format, and the second is based on a polar image specification. DoD implementations should use the rectilinear format.	Mandated

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Standards Category	Standard Name	Description	DISR Status
Other Modalities	ANSI INCITS 395-2005 Biometric Data Interchange Formats – Signature/Sign Data	This standard specifies a data interchange format for representation of digitized sign or signature data for the purposes of biometric enrollment, verification, or identification through the use of raw signature/sign sample data or common feature data. The data interchange format is generic in that it may be applied and used in a wide range of application areas where electronic signs or signatures are involved.	Mandated (Accepted Change)
Other Standards and Normative Documents	ISO/IEC 7816-11:2004 – Identification cards – Integrated circuit cards – Part 11: Personal verification through biometric methods	This international standard specifies the use of inter-industry commands and data objects related to personal verification through biometric methods in integrated circuit cards. The inter-industry commands used are defined in ISO/IEC 7816-4. The data objects are partially defined and partially imported from ISO/IEC 19785-1. This standard also presents examples for enrollment and verification and addresses security issues.	Mandated
	NIST SP 800-76.1 Biometric Data Specification for Personal Identity Verification (PIV)	This document, SP 800-76.1, is a companion document to FIPS-201. It describes technical acquisition and formatting specifications for the biometric credentials of the PIV system, including the PIV card itself. The primary design objective behind these particular specifications is high performance universal interoperability.	Mandated
Technical Interface	ANSI INCITS 398-2005 [NISTIR 6529-A] Common Biometric Exchange Formats Framework (CBEFF)	This standard describes a set of data elements necessary to support biometric technologies in a common way. These data elements can be placed in a single file used to exchange biometric information between different systems or system components. The result promotes interoperability of biometric-based application programs and systems developed by different vendors by allowing biometric data interchange.	Retire (Accepted Change)
	ANSI INCITS 358-2002 (R2007) BioAPI Specification (Version 1.1)	This standard provides a high-level generic biometric authentication model suited for any form of biometric technology. It covers the basic functions of enrollment, verification, and identification and includes a database interface to allow a BSP to manage the Identification population for optimum performance.	Mandated
	ISO/IEC Project 19784-1: BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification, Amendment 1: BioGUI Specification	The functionality specified in this amendment enables an application to control the display of graphics at enrollment, verification, and identification as an alternative to using the GUI provided by BSPs. It is expected to better meet the needs of users of biometric applications who wish to have full control of the user interface during enrollment, verification, and	Emerging

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Standards Category	Standard Name	Description	DISR Status
		identification.	
	ISO/IEC 19784-2 Biometric Application Programming Interface (BioAPI) – Part 2: Biometric Archive Function Provider Interface	This part of the BioAPI international standard specifies the interface to an archive Biometric Function Provider (BFP). An archive BFP is responsible for the storage and management of BIRs.	Mandated (Accepted Change)
	ISO/IEC 19785-1:2006 Common Biometric Exchange Formats Framework – Part 1: Data Element Specification	The CBEFF promotes interoperability of biometric-based applications and systems by specifying standard structures for BIRs and a set of abstract data elements and values that can be used to create the header part of a CBEFF-compliant BIR. The primary purpose of Part 1 of this international standard is to define these abstract data elements.	Mandated (Accepted Change)
	ISO/IEC 19785-2:2006: Common Biometric Exchange Formats Framework – Part 2: Procedures for the Operation of the Biometrics Registration Authority	This part of the CBEFF international standard supports such exchanges by providing unambiguous identification of biometric organizations, formats, and products. It specifies the procedures to be followed by the Biometric Registration Authority in preparing, maintaining, and publishing registers of identifiers for biometric organizations, CBEFF patron formats, biometric data block formats, security block formats, and biometric products.	Mandated (Accepted Change)
	ISO/IEC 24709-1: Conformance Testing for BioAPI – Part 1: Methods and Procedures	This international standard defines a conformance testing methodology for BioAPI as specified in ISO 19784-1. It specifies three conformance testing models that enable conformance testing of each component of BioAPI (an application, a framework, or a BSP). It also specifies a test assertion language used for the definition of test assertions. Actual test assertions for each of the BioAPIs are defined in subsequent parts of this international standard.	Emerging
	ISO/IEC Project 24709-2: Conformance Testing for BioAPI – Part 2: Test Assertions for Biometric Service Providers	This part of ISO/IEC 24709 defines a number of test assertions written in the assertion language specified in ISO/IEC 24709-1. These assertions enable a user of this part of ISO/IEC 24709 (such as a testing laboratory) to test the conformance to ISO/IEC 19784-1 (BioAPI 2.0) of any BSP that claims to be a conforming implementation of that international standard.	Emerging
Application Profiles	ANSI INCITS 421:2006 Biometric Profile – Interoperability and Data Interchange – DoD Implementations	This standard specifies a biometric profile for military applications. It defines a set of base standards and criteria for applying those standards in applications that process and store biometric data on enemy prisoners of war, detainees, internees, and persons of interest with respect to national security.	Retire (Accepted Change)

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Standards Category	Standard Name	Description	DISR Status
	ISO/IEC 24713-3: Biometric Profiles for Interoperability and Data Interchange – Part 3: Biometric-Based Verification and Identification of Seafarers	This international standard specifies a biometric profile including necessary parameters and interfaces between function modules (<i>i.e.</i> , BioAPI-based modules and an external interface) in support of biometric identification and verification of seafarers. The domain of applicability may extend to other situations where an interoperable biometrics-based identity document is required, but the main focus is on the use of biometrics on a Seafarers Identity Document (SID).	Information Guidance
Performance Testing	ANSI INCITS 409.1-2005: Biometric Performance Testing and Reporting – Part 1: Principles and Framework	This standard addresses testing the accuracy of identification and verification devices, algorithms, and systems. This part is intended to summarize the other parts of the standard. An overview of the primary testing protocols, biometric applications, and performance metrics is presented. It also provides guidance on data analysis techniques, recording of results, and performance reporting measures available.	Mandated
	ANSI INCITS 409.2-2005: Biometric Performance Testing and Reporting – Part 2: Technology Testing and Reporting	This standard specifies methods for performance testing of biometric systems and devices. It constitutes a specialization of a biometric testing framework standard in that it is concerned only with the offline use of stored (<i>i.e.</i> , previously captured) biometric samples and not the interaction of human subjects with a biometric sensor. The standard covers comparative or absolute testing of performance of biometric algorithms, components, or systems, comparison of biometric data sets, prediction of elements of deployed online performance, and assessment of performance available from complex data samples including repeated sample and multimodal data.	Mandated
	ANSI INCITS 409.3-2005: Biometric Performance Testing and Reporting – Part 3: Scenario Testing and Reporting	This standard specifies the requirements for scenario-based biometric testing and reporting. The goal of scenario testing is to determine the overall system performance in a prototype or simulated application. Testing is carried out on a complete system in an environment that models a real-world target application of interest.	Mandated
	ANSI INCITS 409.4: Biometric Performance Testing and Reporting – Part 4: Operational Testing Methodologies	This standard provides the test planning, test execution, and test reporting requirements that must be followed during the biometric systems operational test. The goal is to determine if the performance of the complete biometric system meets the requirements of that specific application.	Mandated (Accepted Change)

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Standards Category	Standard Name	Description	DISR Status
Multi-Biometrics and Data Interchange Frameworks	ANSI/NIST ITL 1-2007 Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information – Part 1	This standard defines the content, format, and units of measurement for the exchange of fingerprint, palm print, facial/mugshot, scar mark & tattoo (SMT), iris, and other biometric sample information that may be used in the identification or verification process of a subject. This project is a revision of the ANSI/NIST ITL 1-2000 standard. Included in this revision is work to include additional modalities and align the standard with INCITS M1 and international IT and biometric standards.	Information Guidance

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3. Current Status of Biometric Standards

The following table lists the status of national and international biometric standards, both approved and under development. The status of development projects changes frequently, and this table is updated regularly based primarily on the outcomes of biometric standards body meetings. High-priority standards have a proposed priority of 1; medium-priority standards are assigned a 2; and lower-priority standards are assigned a 3. Standards projects assigned an asterisk (*) have not been assigned a priority by the DoD BSWG, and projects marked “N/A” are not a priority for the DoD.

Standards Category	Standard Name	Description	Proposed Priority	Status
Fingerprint Image	ANSI/NIST ITL 1-2000: Data Format for the Interchange of Fingerprint, Facial, & Scar Mark & Tattoo (SMT) Information	This standard defines the content, format, and units of measurement for the exchange of fingerprint, palm print, facial/mug shot, and SMT full-image information that may be useful in identifying a subject.	1	Published
	INCITS 1577-D: Revision of INCITS 381-2004: Finger Image-Based Data Interchange Format	Implementers working with INCITS 381-2004 have raised concerns that it is not sufficiently precise regarding its conformance requirements. One objective of this project will be to evaluate such concerns and develop revisions in the standard to resolve them. Test results of initial interoperability of biometric data that conform to INCITS 381-2004 have suggested that the degree of interoperability may, at least in certain situations, be less than was intended by the original standard. A second objective of this project will be to evaluate such test results and possibly develop technical changes that may result in higher levels of interoperability.	1	In Publication

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Standards Category	Standard Name	Description	Proposed Priority	Status
	ANSI INCITS 381-2004: Finger Image-Based Data Interchange Format	This standard specifies an interchange format for the exchange of image-based fingerprint and palm print recognition data. It defines the content, format, and units of measurement for such information. This standard is intended for those identification and verification applications that require the use of raw or processed image data containing detailed pixel information.	1	Published
	ISO/IEC 19794-4: Biometric Data Interchange Formats – Part 4: Finger Image Data	This standard specifies a data record interchange format for storing, recording, and transmitting the information from one or more finger or palm image area within an ISO/IEC 19785-1 Common Biometric Exchange Formats Framework (CBEFF) data structure. This can be used for the exchange and comparison of finger image data.	1	Published
	ISO/IEC 19794-4:2005/Cor.1:2007 – Information technology – Biometric data interchange formats – Part 4: Finger image data TECHNICAL CORRIGENDUM 1	This contains resolution of several defects found in the base standard.	1	In publication
	ISO/IEC 19794-4 Revision 1	This revision of ISO/IEC 19794-4 will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	1	Committee Draft (CD)
	INCITS 423.4: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 4: Conformance Testing Methodology for INCITS 381, Finger Image Data Interchange Format	This standard, when completed, will present an overview of conformance testing methodology that could be adapted to validate Finger Image-Based Data Interchange Format-conformant files as specified per ANSI INCITS 381-2004.	1	In Publication
	ISO/IEC 29109-4: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 4: Finger Image Data	This standard, when completed, will present an overview of conformance testing methodology that could be adapted to validate Finger Image-Based Data Interchange Format-conformant files as specified per ISO/IEC 19794-4 standard.	*	Final Committee Draft (FCD)

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Standards Category	Standard Name	Description	Proposed Priority	Status
Fingerprint Template	ANSI INCITS 378-2004: Finger Minutiae Format for Data Interchange	This standard defines a method of representing fingerprint information using the concept of minutiae. It defines the placement of the minutiae on a fingerprint, a record format for containing the minutiae data, and optional extensions for ridge count and core/delta information.	1	Published
	INCITS Project 1564-D: Information Technology – Finger Minutiae Format for Data Interchange, Revision 1	This revision of INCITS 378-2004 will resolve concerns that it is not sufficiently interoperable or precise regarding its conformance requirements. One objective of this project will be to evaluate such concerns and develop revisions in the standard that will resolve them. A second objective of this project will be to develop technical changes that may result in higher levels of interoperability.	1	Public Review (PR)
	ISO/IEC 19794-2: Biometric Data Interchange Formats – Part 2: Finger Minutiae Data	This standard specifies a concept and data formats for representation of fingerprints using the fundamental notion of minutiae. It is generic in that it may be applied and used in a wide range of application areas where automated fingerprint recognition is involved. ISO/IEC 19794-2 contains definitions of relevant terms, a description of how minutiae shall be determined, data formats for containing the data for both general use and for use with cards, and conformance information.	1	Published
	ISO/IEC 19794-2:2005/Cor.1:2007 Information Technology – Biometric Data Interchange Formats – Part 2: Finger Minutiae Data TECHNICAL CORRIGENDUM 1	This contains resolution of several defects found in the base standard.	1	In publication
	ISO/IEC 19794-2 AM 1: Detailed description of finger minutiae location, direction, and type	This amendment to the base standard will provide detailed clarifications regarding the finger minutiae location, direction, and type.	1	Final Provisional Draft Amendment (FPDAM)
	ISO/IEC 19794-2 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	1	CD

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Standards Category	Standard Name	Description	Proposed Priority	Status
	INCITS 423.2: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 2: Fingerprint Minutiae Conformance Testing Methodology	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ANSI INCITS 378-2004 standard.	3	In publication
	ISO/IEC 29109-2: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 2: Finger Minutiae Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-2 standard.	*	FCD
	ANSI INCITS 377-2004 Finger Pattern Based Interchange Format	This standard specifies an interchange format for the exchange of pattern-based fingerprint recognition data. It describes the conversion of a raw fingerprint image to a cropped and down-sampled finger pattern followed by the cellular representation of the finger pattern image to create the finger-pattern interchange data.	3	Published
	INCITS Project 1563-D: Information Technology – Finger Pattern-Based Data Interchange Format, Revision 1	This revision to INCITS 377-2004 will resolve concerns that the existing standard is not sufficiently interoperable. One objective of this project will be to evaluate such concerns and develop interpretive and technical changes as an amendment to the standard.	3	In publication
	ISO/IEC Project 19794-3: Biometric Data Interchange Formats – Part 3: Finger Pattern Spectral Data	This part of ISO/IEC 19794 specifies the interchange format for the exchange of spectral (pattern)-based fingerprint data. This proposed standard allows the exchange of local or global spectral data derived from a fingerprint image without the exchange of the entire image.	3	Published
	ISO/IEC 19794-3 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	3	Withdrawn
	INCITS 423.3: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 3: Conformance Testing for INCITS 377, Finger Pattern-Based Data Interchange Format	This document describes a two-step conformance test with the ANSI-INCITS 377-2004 “Finger Pattern Data Interchange Format” standard. It provides some general guidelines for conformance testing and then defines the specific assertions that must be checked in each step.	3	PR

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Standards Category	Standard Name	Description	Proposed Priority	Status
	ISO/IEC 29109-3: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 3: Finger Pattern Spectral Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-3 standard.	✱	Withdrawn
	ISO/IEC Project 19794-8: Biometric Data Interchange Formats – Part 8: Finger Pattern Skeletal Data	This standard specifies the interchange format for the exchange of pattern-based skeletal fingerprint recognition data. It allows for the extraction of both spectral information (orientation, frequency, phase, etc.) and features (minutiae, core, ridge count, etc.).	3	Published
	ISO/IEC 19794-8 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	3	CD
Face	ANSI INCITS 385-2004: Face Recognition Format for Data Interchange	This standard specifies definitions of photographic environment, subject pose, focus, properties, digital image attributes, and a face interchange format for relevant applications, including human examination and computer-automated face recognition.	1	Published
	INCITS (Project 1565-D) 385-2004: Amendment 1 – Information Technology – Face Recognition Format for Data Interchange Amendment 1 – 3D Face	This is an amendment to INCITS 385-2004, Information Technology – Face Recognition Format for Data Interchange. The amendment defines a new version of the data format that enables optional storage of 3D face data in addition to regular 2D photo image. Backward compatibility is provided.	1	In publication
	INCITS Project 1565-M: Information Technology – Face Recognition Format for Data Interchange, Revision 1	This proposed revision is intended to incorporate changes to the face recognition format standard that were developed in the course of work on the 3D Face amendment project 1565-D. The changes that have been developed as a separate document should now be incorporated in the text of the standard to produce version 2.0.	2	Proposed for Withdrawal

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Standards Category	Standard Name	Description	Proposed Priority	Status
	ISO/IEC 19794-5: Biometric Data Interchange Formats – Part 5: Face Image Data	This standard specifies scene, photographic, digitization, and format requirements for images of faces to be used in the context of both human verification and computer-automated recognition. The format is designed to allow for the specification of visible information discernible by an observer pertaining to the face, such as gender, pose, and eye color.	1	Published
	ISO/IEC 19794-5: Biometric Data Interchange Formats – Part 5: Face Image Data – Amendment 1 – Conditions for Taking Photographs for Face Image Data	This amendment provides expert guidance for the design of photographic studios and photo booths and, as such, it supplements the information provided in the standard and Annex A. It also provides guidance on printing quality and on scanning printed face photographs.	1	Published
	ISO/IEC 19794-5: Biometric Data Interchange Formats – Part 5: Face Image Data – Amendment 2: 3-Dimensional Face Image Data Interchange Format	This amendment of ISO/IEC 19794-5 is intended to establish a data interchange format for storing 3D human face images. To achieve this, several new image types are introduced that are a combination of 2D facial images and associated 3D range information.	2	Final Draft Amendment (FDAM)
	ISO/IEC 19794-5:2005/Cor.3:2007 Information Technology – Biometric Data Interchange Format – Part 5: Face Image Data – Technical Corrigendum 2	This contains resolution of several defects found in the base standard.	1	Published
	ISO/IEC 19794-5 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	1	CD
	INCITS Project 1749-D: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 5: Conformance Testing Methodology for INCITS 385-2004 Face Image Interchange Format	This project would establish the specifications of the framework, concepts, methodology for testing, and criteria to be achieved to claim conformance to INCITS 385-2004, Information Technology – Face Image Interchange Format. The proposed standard will include specification conformance test procedures and a critical set of test assertions useful to test the conformity requirements of INCITS 385-2004.	1	On hold in favor of ISO/IEC 29109-5

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	ISO/IEC 29109-5: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 5: Face Image Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-5 standard.	*	CD
	ISO/IEC Proposed Draft Technical Report 19794-12: Biometric Data Interchange Formats – Part 12: Feature Based Face Recognition	This proposed work item will develop a feature based interchange format for face identity data that can contain the face identity data extracted by, not only MPEG-7 (video), but also other face recognition technologies.	3	Withdrawn
Iris	INCITS Project 1576-D: Revision of INCITS 379-2004 – Iris Image Format for Data Interchange	This standard describes a format for exchange of iris image information. It contains a definition of attributes, a data record format, sample records, and conformance criteria. Two alternative formats for iris image data are described, one based on a Cartesian coordinate system and the other on a polar coordinate system.	N/A	Withdrawn
	ANSI INCITS 379-2004: Iris Image Interchange Format	This standard describes a format for the exchange of iris image information. It contains a definition of attributes, a data record format, sample records, and conformance criteria. Two alternative formats for iris image data are described, one based on a Cartesian coordinate system and the other on a polar coordinate system.	N/A	Withdrawn
	ISO/IEC 19794-6: Biometric Data Interchange Formats – Part 6: Iris Image Data	This standard specifies two alternative image interchange formats for biometric authentication systems that use iris recognition. The first format is based on a rectilinear image storage format, and the second is based on a polar image specification.	1	Published
	ISO/IEC 19794-6 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	1	CD
	INCITS Project 1749-D: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 6: Conformance Testing Methodology for INCITS 379-2004: Iris Image Interchange Format	This proposed standard would establish the specifications of the framework, concepts, methodology for testing, and criteria to be achieved to claim conformance to INCITS 379-2004, Information Technology – Iris Image Interchange Format.	N/A	Withdrawn

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	ISO/IEC 29109-6: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 6: Iris Image Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-6 standard.	*	Working Draft (WD)
Other Modalities	ANSI INCITS 396-2005: Hand Geometry Format for Data Interchange	This standard specifies an interchange format for the exchange of hand geometry data in a silhouette format. It defines the content, format, and units of measurement for such information. This standard is intended for those identification and verification applications that require the use of an interoperable hand geometry template.	N/A	Withdrawn
	ISO/IEC Project 19794-10: Biometric Data Interchange Formats – Part 10: Hand Geometry Silhouette Data	This standard specifies a data record interchange format for storing, recording, and transmitting the information from a hand silhouette within a CBEFF data structure. This proposed standard could be used for the exchange of hand geometry data.	2	Published
	INCITS Project 1749-D: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 10: Conformance Testing Methodology for INCITS 396:2005 – Hand Geometry Interchange Format	This proposed standard would establish the specifications of the framework, concepts, methodology for testing, and criteria to be achieved to claim conformance to INCITS 396:2005, Information Technology – Hand Geometry Interchange Format.	N/A	Withdrawn
	INCITS Project 1797-D: Keystroke Dynamics Format for Data Interchange	This standard defines a method of representing keystroke dynamics information for the purpose of identifying an individual. It defines the set of data elements used to describe a set of keystrokes or other data input and a record format for containing the keystroke dynamic data.	N/A	Withdrawn
	ANSI INCITS 395-2005: Biometric Data Interchange Formats – Signature/Sign Data	This standard specifies a data interchange format for representation of digitized sign or signature data for the purposes of biometric enrollment, verification, or identification through the use of raw signature/sign sample data or common feature data. The data interchange format is generic in that it may be applied and used in a wide range of application areas where electronic signs or signatures are involved. No application-specific requirements or features	3	Published

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		are addressed in this standard.		
	ISO/IEC Project 19794-7: Biometric Data Interchange Formats – Part 7: Signature/Sign Time Series Data	This part of ISO/IEC 19794 specifies a concept and data interchange format for dynamic signature/sign behavioral data captured in the form of a time series using devices such as digitizing tablets or advanced pen systems. This part of ISO/IEC 19794 contains definitions of relevant terms, a description of what data are captured, a data format for containing the data alongside examples of record contents, and best practice in capture.	3	Published
	ISO/IEC Project 19794-11: Biometric Data Interchange Formats – Part 11: Signature/Sign Processed Dynamic Data	This standard specifies a concept and data interchange format for signature/sign dynamic data captured in the form of time series using, <i>e.g.</i> , digitizing tablets or advanced pen devices. The standard contains definitions of relevant terms, a description of what data are captured, a data format for containing the data alongside examples of record contents, and best practice in capture.	3	CD
	ISO/IEC Project 19794-9: Biometric Data Interchange Formats – Part 9: Vascular Image Data	This part of the ISO/IEC 19794 standard specifies an image interchange format for biometric person identification or verification technologies that use human vascular biometric images and may be used for the exchange and comparison of vascular image data.	3	Published
	INCITS Project 1821-D: Speaker Biometrics Format for Data Interchange	This draft standard will define a speaker biometric data interchange format for the exchange of speaker data. The standard will contain a specific definition of the fields of information to be included in the format to effectively communicate about speaker recognition transactions and a data record format for storing and transmitting the speaker information and data.	2	PR
	ISO/IEC Project 19794-13: Voice Data	The scope of this project is to generate two distinct speech data interchange formats for speech recognition. The first format will support raw speech data, and the second may include formats for interchange at the feature vector level. The standard specifies a data record interchange format for recording, storing, and transmitting voice information. It	2	Base Document (BD)

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		defines the content, format, and units of a model for the exchange of voice data that may be used in the verification or identification process of a subject/speaker. The standard also specifies interchange formats for biometric authentication systems that use speaker recognition techniques.		
	19794-14: Biometric Data Interchange Formats – Part 14: DNA Data	This part of ISO/IEC 19794 standard specifies a DNA Data (interchange format) for personal identification or verification technologies that use human DNA and may be used for the exchange and comparison of DNA data (interchange format). The target is to produce an interchange format that will be useful for forensic exchanges and databases, immigration, and paternity testing. It will provide the ability for DNA-profiles produced by one conforming system to be used for comparison with other samples produced by any other conforming system, subject to privacy.	*	WD
	ISO/IEC 29109-6: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 7: Signature/Sign Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-7 standard.	*	WD
	ISO/IEC 29109-9: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 9: Vascular Image Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-9 standard.	*	CD
	ISO/IEC 29109-10: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 10: Hand Geometry Silhouette Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-10 standard.	*	FCD
	ISO/IEC 29109-13: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 13: Voice Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-13 standard.	*	BD

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	ISO/IEC 29109-14: Conformance Testing Methodology for Biometric Data Interchange Formats defined in ISO/IEC 19794 – Part 14: DNA Data	This standards project will establish a framework and define test requirements and guidelines for a conformance testing methodology to determine conformity of products and services that use the ISO/IEC 19794-14 standard.	*	WD
Multi-Biometrics and Data Interchange Frameworks	INCITS 439:2008: Fusion Information Format for Data Interchange	This standard specifies several fusion information records that contain statistical information intended to facilitate interoperable, modular, score-level fusion of biometric systems.	2	Published
	ISO/IEC 29159-1: Biometric Calibration and Augmentation Data – Part 1 – Fusion Information Format	This standard will define a framework and data format for multi-biometric fusion and other calibration and augmentation data.	*	CD
	INCITS 358:2002 AMENDMENT 1:2007 BioAPI Specification (Version 1.1) – Amendment 1: Support for Multimodal Biometric Fusion	This amendment to INCITS 358 adds support for biometric fusion to the standard. It extends the API and the SPI by specifying new functions and new values of existing data types.	2	Published
	ISO/IEC TR24722:2007 – Technical Report – Multimodal and Other Multi-Biometric Fusion	This technical report contains a description and analysis of current practice on multimodal and other multi-biometric fusion, including (as appropriate) references to more detailed descriptions. This technical report also contains a description and explanation of high-level multi-biometric concepts to aid in the explanation of multi-biometric fusion approaches, including multimodal, multi-instance, multi-sensorial, multi-algorithmic, decision-level, score-level, and alternative fusion logic.	2	Published
	ISO/IEC Project 19794-1: Biometric Data Interchange Formats – Part 1: Framework	This part of ISO/IEC 19794 is intended to describe the general aspects and requirements for defining biometric data interchange formats. It defines what is commonly applied for biometric data formats, <i>i.e.</i> , the standardization of the common content, meaning, and representation of biometric data formats of biometric types considered in the specific parts of the multipart standard.	1	Published

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	ISO/IEC 19794-1 Revision 1	This revised standard will include all changes (defect resolutions, amendments) to date as well as revised requirements developed as part of the revision process.	1	CD
	ANSI/NIST ITL 1-2007 Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information – Part 1	This standard defines the content, format, and units of measurement for the exchange of fingerprint, palm print, facial/mugshot, scar mark & tattoo (SMT), iris, and other biometric sample information that may be used in the identification or verification process of a subject. This project is a revision of the ANSI/NIST ITL 1-2000 standard. Included in this revision is work to include additional modalities and align the standard with INCITS M1 and international IT and biometric standards.	1	Published
	ANSI/NIST-ITL 2-2008: Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information – Part 2: XML Version	This standard defines an XML encoding of the content, format, and units of measurement for the exchange of fingerprint, palm print, facial/mugshot, scar mark & tattoo (SMT), iris, and other biometric sample information that may be used in the identification or verification process of a subject.	*	Published
	INCITS 423.1: Conformance Testing Methodology Standard for Biometric Data Interchange Format Standards – Part 1: Generalized Conformance Testing Methodology	This part of the multi-part standard on data interchange formats conformance testing specifies the concepts, test types, and test methodologies for conformance testing of biometric systems claiming conformance to data interchange format standards produced by INCITS M1.	1	Published

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	ISO/IEC 29109-1: Conformance Testing Methodology for Biometric Data Interchange Format Standards – Part 1: Generalized Conformance Testing Methodology	This Part 1 of the multi-part international standard will specify conformance testing methods and procedures for implementations of ISO/IEC 19794, including procedures to be followed before, after, and during the test, test results reporting requirements, and a formal assertion language suitable for expressing the details of the conformance of implementations to the ISO/IEC 19794 requirements. Furthermore, this proposed international standard will provide a set of actual test cases written in that assertion language (test assertions), thus enabling the performance of automated testing and reporting activities the results of which are guaranteed to be repeatable and consistent over multiple implementations of this conformance testing standard (test suites).	1	Final Draft International Standard (FDIS)
Transmission	FBI Electronic Fingerprint Transmission Specification (v7.1)	The purpose of the FBI CJIS' EFTS is to specify certain requirements to which agencies must adhere in order to communicate electronically with the FBI's IAFIS. This specification is based on ANSI/NIST ITL 1-2000 and covers IAFIS electronic transmissions involving fingerprints.	1	Published
	FBI Electronic Biometric Transmission Specification (v8.0)	The FBI's EBTS defines FBI-specific requirements for an ANSI/NIST ITL 1-2007 implementation to which agencies must adhere when electronically communicating with the FBI's IAFIS. The scope of the EBTS has been expanded over previous versions to include additional biometric modalities (e.g., palm print, face, and iris) in recognition of the rapidly developing biometric identification industry.	1	Published
	DoD Electronic Biometric Transmission Specification (v1.2)	This specification is an extension of the FBI's EFTS that includes transaction types and codes that support requirements for DoD encounters and detainment circumstances. The DoD EBTS defines the transmission of biometric samples for face, fingerprint, and iris modalities. This standard is intended for those applications requiring the exchange of biometric samples and related biographic	1	Published

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		and contextual data with DoD repositories.		
	Terrorist Watchlist Person Data Exchange (TWPDES) v1.2b	This standard provides a data exchange format with biometrics and XML for terrorist watch list data that supports the DOS, DOJ, intelligence community under the Director of Central Intelligence, and DHS. The purpose is to develop and maintain, to the extent permissible by law, the most thorough, accurate, and current information possible about individuals known or appropriately suspected to be or have been involved in activities constituting, in preparation for, in aid of, or related to terrorism.	*	Published
	DoD Electronic Biometric Transmission Specification (v2.0)	This standard will contain modifications of DoD EBTS 1.2 to align it with capabilities provided by the new ANSI/NIST-ITL 1-2007 and FBI EBTS.	1	Under development
	Global Justice XML Data Model (Global JXDM) (v3.0.3)	The Global JXDM is an XML standard designed specifically for criminal justice information exchanges, providing law enforcement, public safety agencies, prosecutors, public defenders, and the Judicial Branch with a tool to effectively share data in a timely manner. The Global JXDM removes the burden from agencies to independently create exchange standards, and because of its extensibility, there is more flexibility to deal with unique agency requirements and changes.	1	Published
	National Information Exchange Model (NIEM) (v2.0)	NIEM is a partnership of DOJ and DHS designed to develop, disseminate, and support enterprise-wide information exchange standards and processes that can enable jurisdictions to effectively share critical information in emergency situations, as well as support the day-to-day operations of agencies throughout the nation. NIEM standardizes content (actual data exchange standards), provides tools, and manages processes. NIEM leverages the data exchange standards efforts successfully	*	Published

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		implemented by DOJ's Global Justice Information Sharing Initiative and extends the Global JXDM to facilitate timely, secure information sharing across the whole of the justice, public safety, emergency and disaster management, intelligence, and homeland security enterprise.		
	Terrorist Watchlist Person Data Exchange (TWPDES)	This standard provides a data exchange format for terrorist watch list data that supports the DOS, DOJ, intelligence community under the Director of Central Intelligence, and DHS. The purpose is to develop and maintain, to the extent permissible by law, the most thorough, accurate, and current information possible about individuals known or appropriately suspected to be or have been involved in activities constituting, in preparation for, in aid of, or related to terrorism.	*	Published
	IDENT eXchange Messaging (IXM)	This document provides detailed information on messaging operation and steps required to create an interface for external users to interact with US-VISIT/IDENT applications.	*	Published
Technical Interfaces	ANSI INCITS 358-2002: BioAPI Specification (Version 1.1)	This standard provides a high-level generic biometric authentication model suited for any form of biometric technology. It covers the basic functions of enrollment, verification, and identification and includes a database interface to allow a BSP to manage the Identification population for optimum performance.	1	Published

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	ANSI INCITS 358-2002 AM1: BioAPI Specification (Version 1.1) – Amendment 1: Support for Biometric Fusion	This amendment to INCITS 358 adds support for biometric fusion to the standard. This amendment extends the API and the SPI of BioAPI by specifying new functions and new values for existing data types.	*	Published
	ISO/IEC 19784-1: BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification	This international standard provides a high-level generic biometric authentication model suited to most forms of biometric technology. No explicit support for multimodal biometrics is currently provided. An architectural model is described that enables components of a biometric system to be provided by different vendors and to interwork through fully defined APIs.	1	Published
	ISO/IEC 19784-1: BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification, Amendment 1: BioGUI Specification	The functionality specified in this amendment enables an application to control the display of graphics at enrollment, verification, and identification as an alternative to using the GUI provided by BSPs. It is expected to better meet the needs of users of biometric applications who wish to have full control of the user interface during enrollment, verification, and identification.	2	Published
	ISO/IEC Project 19784-1: BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification, Amendment 2: Framework Free BioAPI	This amendment will allow BioAPI to be applied where a system is to be built from conforming BSP components (without a BioAPI Framework module) using platform-specific system integration mechanisms.	2	FDAM
	ISO/IEC Project 19784-1: BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification, Amendment 3: Support for Interchange of Certificates and Security Assertions	This amendment will add functions or parameters to the BioAPI interfaces and to related standards to support security features identified in the ISO/IEC SC 27 work on ACBio and the ITU-T SG17 work on X.tsm and X.tai.	*	FPDAM
	ISO/IEC 19784-2: Biometric Application Programming Interface (BioAPI) – Part 2: Biometric Archive Function Provider Interface	This part of the BioAPI standard specifies the interface to an archive BFP. An archive BFP is responsible for the storage and management of BIRs.	3	Published
	ISO/IEC Project 19784-3: Biometric Application Programming Interface (BioAPI) – Part 3: BioAPI Lite	This international standard will specify a reduced (but BioAPI compatible) version of BioAPI. It will enable sensor devices to have a very simple interface to facilitate	2	Canceled

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		communication of embedded devices through a BioAPI-compatible interface.		
	ISO/IEC Project (TBD): BioAPI Lite	BioAPI Lite is meant to provide a standard interface with hardware biometric modules, designed to be integrated in embedded systems, which may be constrained in memory and computational power. This project differs in scope from 19784-3 and will soon have a different project number.	2	CD
	ISO/IEC Project 19784-4: Biometric Application Programming Interface (BioAPI) – Part 4: Biometric Sensor Function Provider Interface	This project concerns standardizing the lowest level internal interfaces of BioAPI where it interfaces with the sensor device.	2	CD
	INCITS 429: Conformance Testing Methodology for ANSI INCITS 358-2002, BioAPI Specification	This standard specifies the concepts, framework, test methods, and criteria to be achieved for BSPs to claim conformity to the BioAPI specification ANSI INCITS 358-2002.	1	In publication
	ISO/IEC 24709-1: Conformance Testing for BioAPI – Part 1: Methods and Procedures	This international standard defines a conformance testing methodology for BioAPI as specified in ISO 19784-1. It specifies three conformance testing models that enable conformance testing of each component of BioAPI (an application, a framework, or a BSP). It also specifies a test assertion language used for the definition of test assertions. Actual test assertions for each of the BioAPIs are defined in subsequent parts of this international standard.	1	Published
	ISO/IEC 24709-2: Conformance Testing for BioAPI – Part 2: Test Assertions for Biometric Service Providers	This part of ISO/IEC 24709 defines a number of test assertions written in the assertion language specified in ISO/IEC 24709-1. These assertions enable a user of this part of ISO/IEC 24709 (such as a testing laboratory) to test the conformance to ISO/IEC 19784-1 (BioAPI 2.0) of any BSP that claims to be a conforming implementation of that international standard.	1	Published
	ISO/IEC Project 24709-3: Conformance	This part of ISO/IEC 24709 will define a number of test	2	CD

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	Testing for BioAPI – Part 3: Test Assertions for BioAPI Frameworks	assertions written in the assertion language specified in ISO/IEC 24709-1. These assertions enable a user of this part of ISO/IEC 24709 (such as a testing laboratory) to test the conformance to ISO/IEC 19784-1 (BioAPI 2.0) of any BioAPI frameworks that claim conformity to that standard.		
	ISO/IEC Project 24709 4: Conformance Testing for BioAPI – Part 4: Test Assertions for Biometric Applications	This part of ISO/IEC 24709 will define a number of test assertions written in the assertion language specified in ISO/IEC 24709 1. These assertions enable a user of this part of ISO/IEC 24709 (such as a testing laboratory) to test the conformance to ISO/IEC 19784 1 (BioAPI 2.0) of any BioAPI applications that claim conformity to that standard.	2	Project canceled
	INCITS Project 1829-D: Biometric Application Programming Interface – Java Interfaces	This proposed standard will specify an interface of a Java BioAPI framework and Java BioAPI BSP that will mirror the corresponding components specified in ISO/IEC 19784-1. Therefore, the proposed standard will be nearly identical to ISO/IEC 19784-1, with the only difference being the programming language of the interfaces.	3	WD
	INCITS Project 1832-D (ANSI INCITS 434 – TBD) – Ten-print Capture Using BioAPI	This proposed standard provides a mechanism and supplemental guidance on the use of ISO/IEC 19784-1, BioAPI specification, a software interface standard, for the purpose of performing a ten-print fingerprint capture operation.	1	In publication
	ISO/IEC Project 29141: Ten-print Capture for BioAPI	This is an ISO-formatted version of INCITS Project 1832-D. It will be registered at the accelerated status of CD, and an LB will be issued on this CD.	*	FDIS
	ANSI INCITS 398-2005 [NISTIR 6529-A]: Common Biometric Exchange Formats Framework (CBEFF)	This standard describes a set of data elements necessary to support biometric technologies in a common way. These data elements can be placed in a single file used to exchange biometric information between different system components or between systems. The result promotes interoperability of biometric-based application programs and systems developed by different vendors by allowing biometric data interchange.	1	Published

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	ANSI INCITS 398-2008 (INCITS Project 1622-R): Common Biometric Exchange Formats Framework (CBEFF)	This revision to ANSI INCITS 398-2005 corrects a number of alleged technical errors and contains other modifications noted by users of the standard, clarifications to further help users and developers, and new features such as nested data structures and new/redefined fields.	1	Published
	ANSI INCITS 398-20xx (INCITS Project 1622-R): Common Biometric Exchange Formats Framework (CBEFF) (Revision of ANSI INCITS 398-2008)	This revision to ANSI INCITS 398-2008 will add support to CBEFF for more detailed biometric quality information. The proposed revision will also correct technical errors and incorporate modifications noted by users and implementers of the standard, as well as clarifications to further help new users and developers of these data structures.	*	New Project
	INCITS Project 1853-D: Conformance Testing Methodology for Common Biometric Exchange Formats Framework (CBEFF) Data Structures Specified in INCITS 398-2008	This proposed standard will establish the specification of a conformance testing methodology for the CBEFF data structures specified in INCITS 398:2008 (bit/byte encoding). This proposed standard will include a set of test cases that can determine whether data records or implementations producing them conform to the CBEFF standard requirements. It will also include general concepts, conformance testing methods and procedures, test data description and parameters, test results reporting requirements, and other criteria necessary to achieve claim of conformance to the CBEFF standard.	1	WD
	ISO/IEC Project 19785-1:2006: Common Biometric Exchange Formats Framework – Part 1: Data Element Specification	The CBEFF promotes interoperability of biometric-based applications and systems by specifying standard structures for BIRs and a set of abstract data elements and values that can be used to create the header part of a CBEFF-compliant BIR. The primary purpose of Part 1 of this international standard is to define these abstract data elements.	1	Published
	ISO/IEC Project 19785-1:2006, Amd. 1 Common Biometric Exchange Formats Framework – Part 1: Data Element Specification Amendment 1, Support for additional data elements	Addition of new data elements required by the parts of 19795.	*	FPDAM

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	ISO/IEC 19785-2:2006: Common Biometric Exchange Formats Framework – Part 2: Procedures for the Operation of the Biometrics Registration Authority	This part of the CBEFF international standard supports such exchanges by providing unambiguous identification of biometric organizations, formats, and products. It specifies the procedures to be followed by the Biometric Registration Authority in preparing, maintaining, and publishing registers of identifiers for biometric organizations, CBEFF patron formats, biometric data block formats, security block formats, and biometric products.	2	Published
	ISO/IEC Project 19785-2:2006, Amd. 1: Common Biometric Exchange Formats Framework – Part 2: Procedures for the Operation of the Biometrics Registration Authority Amendment 1, Additional Registrations	Addition of registrations required by the parts of 19795.	*	FPDAM
	ISO/IEC 19785-3: Common Biometric Exchange Formats Framework – Part 3: Patron Format Specifications	This part of the CBEFF international standard specifies and publishes registered CBEFF patron formats (see ISO/IEC 19785-1) and specifies their registered CBEFF patron format identifiers (see ISO/IEC 19785-2) and resulting full ASN.1 object identifiers.	2	Published
	ISO/IEC Project 19785-3, Amd 1: Common Biometric Exchange Formats Framework – Part 3: Patron Format Specifications Amendment 1, Support for additional data elements	Representation of new data elements added by CBEFF Part 1, Amendment 1 in Patron Formats	*	FPDAM
	ISO/IEC Project 19785-4: Common Biometric Exchange Formats Framework – Part 4: Security Block Format Specification	This part of the CBEFF international standard defines Security Block (SB) formats much as Part 3 defined Patron Formats. CBEFF Part 1 defines the options for integrity and encryption and an SB to contain security information related to these options, but the format and detailed content of an SB is not specified.	*	FCD

