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Biometric Technical Interface Standards

Developer	Standard	Title	Description
INCITS/INCITS M1	ANSI INCITS 358-2002 (Approved through INCITS Fast Track Process)	American National Standard for Information technology for Information Technology – The BioAPI Specification	This specification defines the Application Programming Interface and Service Provider Interface for a standard biometric technology interface. It is beyond the scope of this specification to define security requirements for biometric applications and service providers, although some related information is included by way of explanation of how the API is intended to support good security practices. The BioAPI is intended to provide a high-level generic biometric authentication model; one suited for any form of biometric technology. The standard covers the basic functions of Enrollment, Verification, and Identification, and includes a database interface to allow a biometric service provider (BSP) to manage the Identification population for optimum performance. It also provides primitives that allow the application to manage the capture of samples on a client, and the Enrollment, Verification, and Identification on a server. The specification was originally developed and published in 2000 by the BioAPI Consortium. It was approved as an ANSI INCITS standard in 2002.
INCITS/INCITS M1	ANSI INCITS 398-2005 (Approved through INCITS Fast Track Process)	American National Standard for Information Technology – Common Biometric Exchange Formats Framework (CBEFF)	This specification, the Common Biometric Exchange Formats Framework, is an augmented and revised version of the original CBEFF, the Common Biometric Exchange File Format, published in January 2001 as NISTIR 6529. This version, ANSI INCITS 398-2005 (NISTIR 6529-A), was developed by the CBEFF team based on the specification approved by the Biometrics Interoperability, Performance, and Assurance Working Group (NIST/BC WG) co-sponsored by NIST and the Biometric Consortium. ANSI INCITS 398-2005 contains the same text as NISTIR 6529-A. NISTIR 6529-A was approved by NIST on April 5, 2004. It was approved as an ANSI INCITS standard in 2005.

Biometric Data Interchange Format Standards

Developer	Standard	Title	Description
INCITS/INCITS M1	ANSI INCITS 377-2004	American National Standard for Information technology - 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.
INCITS/INCITS M1	ANSI INCITS 378-2004	American National Standard for Information technology - 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.
INCITS/INCITS M1	ANSI INCITS 379-2004	American National Standard for Information technology - Iris Interchange Format	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.
INCITS/INCITS M1	ANSI INCITS 381-2004	American National Standard for Information technology - Finger Image Based 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.
INCITS/INCITS M1	ANSI INCITS 385-2004	American National Standard for Information technology - 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.
INCITS/INCITS M1	ANSI INCITS 395-2005	American National Standard for Information technology - Biometric Data Interchange Format - Signature/Sign Data	This standard defines a data interchange format for Signature/Sign Data for the purposes of biometric enrolment, verification or identification. The standard contains definitions of raw, time-series based signature/sign sample data and signature/sign feature data as well as a data record format for transmitting these data including extended or proprietary data.
INCITS/INCITS M1	ANSI INCITS 396-2005	American National Standard for Information technology - Hand Geometry Interchange Format	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.

Biometric Profiles

Developer	Standard	Title	Description
INCITS/INCITS M1	ANSI INCITS 383-2004	American National Standard for Information technology - Biometric Profile – Interoperability and Data Interchange – Biometrics-Based Verification and Identification of Transportation Workers	This standard specifies a biometric profile for transportation workers. It defines a set of base standards and criteria for applying those standards in applications where tokens are used for access control and identification of employees. This standard is intended for use in the transportation industry and other industries where identification and verification of employees is necessary to ensure safety and integrity within the work environment.
INCITS/INCITS M1	ANSI INCITS 394-2004	American National Standard for Information technology - Application Profile for Interoperability, Data Interchange and Data Integrity of Biometric-Based Personal Identification for Border Management	This standard specifies a biometric profile for border management applications. It defines a set of base standards and criteria for applying those standards in applications that use biometrics to authenticate the identity of non-citizens as they enter, stay in, and leave the United States.
INCITS/INCITS M1	ANSI INCITS 421-2006	American National Standard for Information Technology – Biometric Profile – Interoperability and Data Interchange – DoD Implementations.	This profile standard selects subsets of existing base standards that are used in the implementation of biometrically enabled systems. Base standards referenced in this document include BioAPI, ANSI/NIST ITL 1-2000, and the FBI's EFTS. It describes military biometric application profile settings for Red Force applications, which process and store biometric data on Enemy Prisoners of War (EPW), detainees, internees, and persons of interest with respect to national security.
INCITS/INCITS M1	ANSI INCITS 422-2006	American National Standard for Information Technology – Application Profile for Commercial Biometric Physical Access Control	This standard specifies a biometric profile for access control applications. It defines a set of base standards and criteria for applying those standards in applications that use biometrics to authenticate the identity of users requesting access to a facility. It establishes minimum conformity requirements for the biometric parts of such systems. It does so without presupposing the use of any particular biometric technology, data storage medium, operating system or card/document media.

Biometric Performance Testing and Reporting Standards

Developer	Standard	Title	Description
INCITS/INCITS M1	ANSI INCITS 409.1-2005	American National Standard for Information technology - Biometric Performance Testing and Reporting Part 1 - Principles Framework	This standard is Part 1 of a multipart standard that specifies a common set of methodologies and procedures to be followed for conducting technical performance testing and evaluations. Included are guidelines that address issues regarding required test sizes, performance statistics, error reporting, and presentation of performance results. These procedures can be incorporated in an "end-to-end" system approach or from an individual technical component perspective.
INCITS/INCITS M1	ANSI INCITS 409.2-2005	American National Standard for Information technology - Biometric Performance Testing and Reporting Part 2 - Technology Testing Methodology	This part of the multipart standard specifies procedures for conducting offline tests of the performance of biometric technologies.
INCITS/INCITS M1	ANSI INCITS 409.3-2005	American National Standard for Information technology - Biometric Performance Testing and Reporting Part 3 - Scenario Testing Methodologies	This part of the multipart standard specifies requirements for scenario-based biometric testing and reporting.
INCITS/INCITS M1	ANSI INCITS 409.4-2006	American National Standard for Information Technology – Biometric Performance Testing and Reporting – Part 4: Operational Testing Methodologies	This part of the multipart standard specifies requirements for operational based biometric testing and reporting. It provides the test planning, test execution and test reporting requirements that must be followed during biometric system's operational tests.