

**InterNational Committee for Information Technology Standards  
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**Application Profile - Interoperability and Data Interchange – Biometrics  
for E-Authentication**

Developed by Fernando Podio and Colin Soutar for review at the meeting of  
AHGBEA – Monday March 19, 2007

Submitted by: AHGBEA/INCITS M1.4

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**M1/07-0169**

**Project Proposal**

**Application Profile - Interoperability and Data Interchange – Biometrics for E-Authentication**

**1. Source of the Proposed Project**

**1.1. Title**

Application Profile - Interoperability and Data Interchange – Biometrics for E-Authentication

**1.2. Date Submitted**

March 22, 2007

**1.3. Proposer**

INCITS Technical Committee M1

**2. Process Description for the Proposed Project**

**2.1. Project Type**

D - This is a standard development project.

**2.2. Type of Document**

The project is expected to result in an ANSI INCITS standard

**2.3. Definitions of Concepts and Special Terms**

Base Standards - define fundamentals and generalized procedures. They provide an infrastructure that can be used by a variety of applications, each of which can make its own selection from the options offered by them.

Application Profiles - define conforming subsets or combinations of base standards used to provide specific functions. Application Profiles identify the use of particular options available in the base standards, and provide a basis for the interchange of data between applications and interoperability of systems.

Electronic authentication (e-authentication) - the process of establishing confidence in user identities electronically presented to an information system.

#### **2.4. Expected Relationship with Approved Reference Models, Architectures, etc.**

None

#### **2.5. Recommended INCITS Development Technical Committee**

INCITS Technical Committee M1 – Biometrics

#### **2.6. Anticipated Frequency and Duration of Meetings**

It is anticipated that this project would require less than half-day meetings approximately four times annually.

#### **2.7. Target Data for Initial Public Review**

It is estimated that the draft document would be ready for submission to INCITS for Milestone 4 processing in January 2008.

#### **2.8. Estimated Useful Life of Standard**

There is no known limit to the useful life of this standard.

### **3. Business Case for Developing the Proposed Standard**

#### **3.1. Description**

The proposed standard is intended to support the deployment of biometric technologies in e-authentication applications. The proposed standard's goals are interoperability, data interchange and security for e-authentication systems based on a variety of authentication architectural configurations with differing storage, matching and transmission characteristics. The unique aspects of e-authentication in the context of remote authentication will also be considered. The proposed standard will describe biometric e-authentication functionality and profile base standards for the most common architectural alternatives currently being deployed for biometric authentication.

#### **3.2 Existing Practice and the Need for a Standard**

Currently there are no existing biometric application profile standards that define a set of base standards and the criteria for applying those standards in applications of biometrics for e-authentication. The use of biometric technologies for e-authentication introduces a new paradigm of considerations in regards to the interaction of the biometric authentication sub-processes (data collection, signal processing, data storage, matching, and decision) which are all tied together through various transmission process(es). In order to effectively

implement biometric technologies for these applications, there is a need to standardize the interaction of the biometric authentication sub-processes and transmission of biometric data. An area of desired standardization is profiling base biometric standards such as biometric data interchange formats and interface standards and document how to use these biometric standards for these applications based on the authentication architecture or configuration that would be employ in an specific applications (e.g., store/match on server, store/match on client, store on device/match on device, store on token/match on server, etc). This standard will leverage from the work performed by the Ad Hoc Group on Biometrics and E-authentication of INCITS M1.4 in this key utilization of biometric technologies.

### **3.3 Implementation Impacts of the Proposed Standard**

#### **3.3.1 Development Costs**

Technical editor labor is expected to total about one month of a staff-year.

#### **3.3.2 Impact on Existing or Potential Markets**

The relatively modest costs of this project are expected to result in benefits as application requirements for biometrics in authentication applications rely on this standard to specify the utilization of base biometric standards in these applications.

#### **3.3.3 Costs and Methods for Conformity Assessment**

This standard should provide a stronger basis for the development of uniform, internationally recognized, interoperability and conformance tests. The willingness of vendors and end-users to jointly define testing requirements is demonstrated by strong activity and support for performance and conformance test development within Technical Committee M1. The possible testing environment may range from the use of suppliers' declarations to third party testing. Therefore the cost of conformity assessment is not known at this time.

#### **3.3.4 Return on Investment**

There is no known data on which to make an estimate.

### **3.4 Legal Considerations**

#### **3.4.1. Patent Assertions**

Determination of patents relevant to this proposed standard will be dependent upon the selection and specification of options in authentication architecture configuration and base standards for use in this application profile.

### **3.4.2. Dissemination of the Standard**

Drafts of this amendment will be distributed electronically. There may be distribution constraints as this document reaches different stages of development and processing within INCITS and ISO/IEC JTC1.

## **4. Related Standards Activities**

### **4.1. Existing Standards**

Existing base standards, which may be specified in the proposed application profile standard, include:

ANSI/INCITS 358-2002 - Information Technology - BioAPI Specification

ANSI/INCITS 377-2004 – Information Technology – Finger Pattern-Based Format for Data Interchange

ANSI/INCITS 378-2004 – Information Technology – Finger Minutiae Format for Data Interchange

ANSI/INCITS 379-2004 – Information Technology – Iris Image Interchange Format

ANSI/INCITS 381-2004 – Information Technology – Finger Image Based Format for Data Interchange

ANSI/INCITS 385-2004 – Information Technology – Face Recognition Format for Data Interchange

ANSI/INCITS 395-2005 – Information Technology – Signature/Sign Data Format

ANSI/INCITS 398-2005 - Information Technology – Common Biometric Exchange Formats Framework

### **4.2. Related Standards Activity**

Related standards activity includes: INCITS Technical Committees B10, CS1, and NIST/ITL

### **4.3. Recommendations for Close Liaison**

INCITS Technical Committees B10 and CS1.

## **5. Units of Measurement used in the Standard**

Indicate units of measurement used in the Standard:

- \_\_\_ International Systems of Units (SI)

- \_\_\_ Inch/Pound
- \_\_\_ Both
- \_\_\_ Other
- XX Not Measurement Sensitive