

International Committee for Information Technology Standards
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Project Proposal: INCITS 358/Amd.1, *Information technology – BioAPI Specification (Version 1.1) – Amendment 1: Support for Biometric Fusion*

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Project Proposal

INCITS 358/Amd.1, *Information technology – BioAPI Specification (Version 1.1) – Amendment 1: Support for Biometric Fusion*

1 Source of the Proposed Project

1.1 Title

INCITS 358/Amd.1, *Information technology – BioAPI Specification (Version 1.1) – Amendment 1: Support for Biometric Fusion*

1.2 Date Submitted

February 28, 2005

1.3 Proposer(s)

INCITS Technical Committee M1, Biometrics

2 Process Description for the Proposed Project

2.1 Project Type (Development or Revision)

R – This is a standard revision project.

2.2 Type of Document

This project is expected to result in an amendment to INCITS 358-2002

2.3 Definitions of Concepts and Special Terms

This project will use a set of terms that are being defined in ISO/IEC WD TR 24722, *Multi-Modal and Other Multi-Biometric Fusion* (currently under development in ISO/IEC JTC 1 SC 37)

2.4 Expected Relationship with Approved Reference Models, Frameworks, Architectures, etc.

This project will specify extensions to BioAPI 1.1 in accordance with the conceptual framework described in ISO/IEC WD TR 24722, *Multi-Modal and Other Multi-Biometric Fusion* (currently under development in ISO/IEC JTC 1 SC 37)

2.5 Recommended INCITS Development Technical Committee

INCITS Technical Committee M1, Biometrics

The recommended task group is M1.2

2.6 Anticipated Frequency and Duration of Meetings

It is anticipated that this project will require one-day meetings approximately quarterly.

2.7 Target Date for Initial Public Review (Milestone 4)

The estimated date for initial public review is April 2006.

2.8 Estimated Useful Life of the Amended Standard

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

3 Business Case for Developing the Proposed Standard or Technical Report

3.1 Description

The need for a standard API in the area of biometric fusion is well recognized, and is proven by the high level of international participation in the multibiometrics technical report (ISO/IEC WD TR 24722) currently being developed within ISO/IEC JTC 1 SC 37.

That technical report draft contains the description of a biometric fusion model (originally provided as a US contribution), identifying abstract "processes" and "data records". It also points to possible future standardization areas, which include a possible API standard supporting biometric fusion.

This document proposes to extend BioAPI 1.1 via an amendment, by adding support for biometric fusion. This proposal is believed to be in accordance with the spirit and content of the technical report draft.

3.2 Existing Practice and the Need for a Standard

Multibiometrics is considered very useful because it typically improves performance and reduces risks in comparison to the use of any single biometric technology on its own. However, multibiometrics is also a relatively new technology, and is not explicitly supported by any specific international standards or US national standards at this time.

It is believed that the widespread adoption of multibiometrics can be facilitated by standardizing some of its aspects. This proposal addresses one of those aspects (the API), and recommends that a standard fusion API be created by extending BioAPI 1.1. Clause 3.3.2 provides some reasons why an amendment to BioAPI is more desirable than a separate new standard.

An extension to BioAPI supporting biometric fusion will enable interoperability among several kinds of software components (BSPs, fusion engines, frameworks, multibiometric applications, etc.) created by different vendors. This, in turn, should facilitate the emergence of a market of software components to be used to build larger multibiometric systems, leading over time to better, cheaper, and replaceable components. BioAPI 1.1 has enabled those things for single biometrics, and has the potential to enable the same things for multibiometrics as well.

3.3 Implementation Impacts of the Proposed Standard

3.3.1 Development Costs

Development costs for this project are expected to be low, and to be covered by the participating organizations.

Project meetings will normally take place in conjunction with regularly scheduled M1 Task Group meetings or via conference calls. It is expected that the amendment document will be smaller than the original standard.

3.3.2 Impact on Existing or Potential Markets

It is expected that the addition of fusion capabilities to BioAPI 1.1 will enable the creation of many new applications for which multibiometrics is a requirement. The cost of developing such new applications will be limited because developers will be using a familiar API (BioAPI) extended to support fusion, as opposed to having to learn a completely new API.

Likewise, it will be possible to add multibiometric support to existing BioAPI applications at a limited cost, because the general underlying model of the API and most of the API functions will not change.

Similar considerations apply to biometric service providers (BSP's), which can be updated to support fusion (for example, by returning scores), as opposed to requiring their vendors to develop an entirely new type of component.

In addition, the ability to build a "fusion engine" in the form of a BioAPI "fusion" BSP will simplify the development of this type of component, by leveraging the existing industry expertise in creating BioAPI BSPs.

3.3.3 Costs and Methods for Conformity Assessment

A conformance testing methodology for INCITS 358 (BioAPI 1.1) is currently being standardized within INCITS M1 (see M1/05-0017). The basic methodology and the vast majority of test assertions specified in that standard will continue to apply to INCITS 358 as amended by this project. However, when this project approaches completion, it might be useful to initiate an amendment to the conformance testing methodology standard in order to add a few assertions exercising the new features.

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

Calls will be made to identify assertions of patent rights in accordance with the relevant INCITS and ANSI policies and procedures.

3.4.2 Dissemination of the Standard or Technical Report

Drafts of the amendment document and of the amended standard will be disseminated electronically. Dissemination of the final amendment document and of the amended standard will be restricted as the document becomes the property of INCITS.

4 Related Standards Activities

4.1 Existing Standards

INCITS 358-2002, Information technology – BioAPI Specification (Version 1.1)

ISO/IEC FDIS 19784-1, BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification

4.2 Related Standards Activity

It is expected that one or more parallel projects will be proposed in order to standardize data formats (containing score information, decision information, fusion input information, etc.) in support of this project.

4.3 Recommendations for Close Liaison

NIST

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
- X Not Measurement Sensitive