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Project Proposal: INCITS xxxx, *Information technology – Biometric application programming interface for Java*

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Project Proposal

INCITS xxxx, *Information technology – Biometric application programming interface for Java*

1 Source of the Proposed Project

1.1 Title

INCITS xxxx, *Information technology – Biometric application programming interface for Java*

1.2 Date Submitted

February 6, 2006

1.3 Proposer(s)

INCITS Technical Committee M1, Biometrics

2 Process Description for the Proposed Project

2.1 Project Type (Development or Revision)

D – This is a standard development project.

2.2 Type of Document

This project is expected to result in a new American National Standard.

2.3 Definitions of Concepts and Special Terms

This proposal uses terms defined in ISO/IEC 19784-1.

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

The proposed standard will specify an interface of a Java BioAPI framework and Java BioAPI BSP which will mirror the corresponding components specified in ISO/IEC 19784-1. Therefore, the position occupied by the proposed standard within the general picture of biometrics standards will be the same position that ISO/IEC 19784-1 occupies, the only difference being the programming language of the interfaces.

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 2007.

2.8 Estimated Useful Life of the Standard

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

3 Business Case for Developing the Proposed Standard or Technical Report

3.1 Description

The proposed standard will specify two Java application programming interfaces semantically equivalent to the two C application programming interfaces (the "BioAPI API" and the "BioSPI API") specified in ISO/IEC 19784-1 as amended by ISO/IEC 19784-1 Amd. 1.

The proposed standard will reuse the conceptual model and component model specified in ISO/IEC 19784-1. In particular, a Java framework will play the same role as the C framework that is specified in ISO/IEC 19784-1; a Java BSP will play the same role as the C BSP that is specified in ISO/IEC 19784-1; and so on. Also, such concepts as "BioAPI unit", "attach session", "component registry", etc., will be present in the proposed standard and will have the same meaning as in ISO/IEC 19784-1. However, the actual functions (methods) and their parameters will be different, and there may also be differences in the permitted sequences of function calls as well as in the detailed behavior of the individual functions.

The two Java APIs specified by the proposed standard will support the entire functionality of the corresponding C APIs specified in ISO/IEC 19784-1 as amended by ISO/IEC 19784-1 Amd. 1. Conformance subclasses for Java BSPs may or may not be defined in the same way as the corresponding conformance subclasses specified in ISO/IEC 19784-1 for C BSPs. The component registry of the Java framework will contain the same information as the C framework specified in ISO/IEC 19784-1 as amended by ISO/IEC 19784-1 Amd. 1.

The proposed standard will not specify any Java "function provider interface", but will enable such interfaces to be specified by future standards. This mirrors the scope of ISO/IEC 19784-1.

The proposed standard will not specify the use of a C BSP with a Java BioAPI application, nor the use of a Java BSP with a C BioAPI application, but will not prevent such uses. In addition, it is expected that a future version of ISO/IEC 24708 (BioAPI Interworking Protocol) will support the linking between a C BioAPI framework and a Java BioAPI framework, thus enabling both Java BSPs and C BSPs to be used, even simultaneously, by the same (Java or C) application.

3.2 Existing Practice and the Need for a Standard

Both the ANSI version of BioAPI (INCITS 358) and the international version of BioAPI (ISO/IEC 19784-1) specify an application programming interface expressed in the C language. The use of this language ensures the wide applicability and implementability of BioAPI across multiple computing platforms and application domains. In particular, a C API is a perfect fit for applications written in the same programming language and is also adequate for applications written in C++.

However, a C API does not work well with applications written in Java, C#, and other programming languages. In particular, the use of a C API from within a Java application is very unnatural, and requires certain programming artifices that introduce complications in the application, thus increasing the cost of application development and maintainance. If a standard Java version of BioAPI were available, the development of Java applications that use a standard biometric API would be easier and cheaper than it is today.

A standard Java version of BioAPI would also allow the development of Java BSPs that are intended for loading into a Java-based application server to perform verification and/or identification operations. In those application servers, a Java BioAPI framework and Java BSPs would work better than their C counterparts.

Another area in which a standard Java version of BioAPI would be useful is that of small computing devices based on Java, where (as on the large application servers mentioned above) a Java BioAPI framework and Java BSPs would fit better than their C counterparts.

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.

3.3.2 Impact on Existing or Potential Markets

It is expected that the availability of a standard Java version of BioAPI will:

- enable the creation of many new BioAPI applications (written in Java), until now hindered by the difficulty of using a C API from within a Java application;
- create a market of Java components that are standard Java BioAPI BSPs, and that can be used (along with a Java BioAPI framework) in Java environments such as Java-based application servers, Java applets, or small Java-based devices; and
- increase the level of adoption of BioAPI by enabling Java application developers to access C BSPs (as if they were Java BSPs) through special versions of the BioAPI framework that will bridge a standard Java BioAPI framework to a standard C BioAPI framework.

3.3.3 Costs and Methods for Conformity Assessment

Costs for conformity assessment of this standard are expected to be reduced as a result of existing conformity assessment standardization projects in both INCITS and JTC 1 SC 37.

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 standard will be disseminated electronically. Dissemination of the final document 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 19784-1, BioAPI – Biometric Application Programming Interface – Part 1: BioAPI Specification

4.2 Related Standards Activity

The development of the proposed standard will likely be affected by the work being done on ISO/IEC 19784-1 Amd. 1 within SC 37.

4.3 Recommendations for Close Liaison

None

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
- Not Measurement Sensitive