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Part 1: Architecture

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Partie 1: Architecture

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, SC 37, *Biometrics*.

ISO/IEC 30106 consists of the following parts, under the general title *Information technology — BioAPI for object oriented programming languages*:

— *Part 1: Architecture*

— *Part 2: Java implementation*

— *Part 3: C# implementation*

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Introduction

The existing versions of BioAPI (ANSI version-INCITS 358 and ISO/IEC 19784-1) specify an application programming interface expressed in the C language. The use of a portable language like C ensures the BioAPI is accessible across multiple computing platforms and application domains. BioAPI is an appropriate fit for applications written in C and is adequate for applications written in C++.

Unfortunately, a function-based language like C does not map easily to the object oriented domain where this issue may be answered with an object oriented (OO) version of BioAPI. As noted, the function-based nature of a C API does not map easily to the object oriented paradigm (i.e. languages such as C# and Java). In particular, the use of a C API from within an object oriented application is unnatural and requires programming constructs which introduce complexity to the development of an application. Development of a OO version of BioAPI aims to increase the productivity of software practitioners who who wish to use the BioAPI whilst remaining in the object oriented domain.

A standard object oriented version of BioAPI allows, in case 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, use of the OO BioAPI is more natural when developing a framework and BSPs than the C version of BioAPI.

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

This part of ISO/IEC 30106 is expected to have the following impact:

— enable creation of BioAPI applications by developers more comfortable with Object Oriented Languages;

— create a market of standard OO BSP components which target OO environments such as Java application servers, Java applets, small Java devices, .NET servers, .NET applications, web services;

— increase the level of adoption of BioAPI by decreasing the barrier of entry for OO developers. This includes providing access to C based BSPs (as if they were OO BSPs) through special versions of the BioAPI framework, bridging a standard OO BioAPI framework to a standard C BioAPI framework.

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Information technology — Object oriented BioAPI —

Part 1: Architecture

1 Scope

This part of ISO/IEC 30106 specifies an architecture for a set of interfaces which define the OO BioAPI. Components defined in this part of ISO/IEC 30106 include a framework, Biometric Service Providers (BSPs), Biometric Function Providers (BFPs) and a component registry.

NOTE Each of these components have an equivalent component specified in ISO/IEC 19784-1 as the OO BioAPI is intended to be an OO interpretation of this part of ISO/IEC 30106.

For this reason, this part of ISO/IEC 30106 is conceptually equivalent to ISO/IEC 19784-1. Concepts present in this part of ISO/IEC 30106 (for example, BioAPI_Unit and component registry) have the same meaning as in ISO/IEC 19784-1. While the conceptual equivalence of this part of ISO/IEC 30106 will be maintained with ISO/IEC 19784-1, there are differences in the parameters passed between functions and the sequence of function calls. These differences exist to take advantage of the features provided by Object Oriented Programming Languages.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 2382-37, *Information technology — Vocabulary — Part 37: Biometrics*

ISO/IEC 19784-1:2006, *Information technology — Biometric Application Programming Interface — Part 1: BioAPI Specification*

ISO/IEC 19785-1:2015, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data Element Specification*

ISO/IEC 19785-3:2015, *Information technology — Common Biometric Exchange Formats Framework — Part 3: Patron format specifications*

3 Terms and definitions

For the purposes of this document, the terms and definitions in ISO 2382-37, ISO/IEC 19784-1, and ISO/IEC 19785 (all parts) apply.

4 Symbols and abbreviated terms

For the purposes of this document, the symbols and abbreviated terms defined in ISO/IEC 19784-1, ISO/IEC 19785 (all parts) and the following apply.

API	Application Programming Interface
BDB	Biometric Data Block
BFP	Biometric (OO) Function Provider

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