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2003-05-06

Replaces:

**ISO/IEC JTC 1
Information Technology**

Document Type: Proposed NP

Document Title: SC 37 New Work Item Proposal-Multi-Modal Biometric Framework

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ISO/IEC JTC 1/SC 37 N164

2003-05-06

Replaces:

**ISO/IEC JTC 1/SC 37
Biometrics**

Document Type: Proposed NP

Document Title: SC 37 New Work Item Proposal-Multi-Modal Biometric Framework

Document Source: National Body of Korea

Project Number:

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PROPOSAL FOR A NEW WORK ITEM

Date of presentation of proposal: 2003-05-05	Proposer: National Body of Korea(KATS)
Secretariat: U.S.A. (ANSI)	ISO/IEC JTC 1/SC 37 N 164

A proposal for a new work item shall be submitted to the secretariat of the ISO/IEC joint technical committee concerned with a copy to the ISO Central Secretariat.
 Presentation of the proposal - to be completed by the proposer. Guidelines for proposing and justifying a new work item are given in ISO Guide 26.

Title: Multi-Modal Biometric Framework
<p>Scope</p> <p>The proposed standard will define an application program interface (API) framework for applications using multiple biometric service providers (BSPs), where each BSP uses a different modality from that used by others and the fusion takes place at the BSP match result level, not at the biometric feature level. The standard will contain a functional definition of the framework, an interface between an application and the framework, and an interface between the framework and a BSP. It will also define a methodology for combining BSP results based on the interfaces and for predicting multi-modal biometric performance.</p>
<p>Purpose and justification</p> <p>At present, there are no standard interfaces among modules comprising a multi-modal biometric application. Nor there exists a standard methodology for estimating how much performance gain will result from adopting multi-modal biometrics. Adoption of multi-modal biometrics for improving biometric performance has been hindered partly by lack of such standards. This standard is intended for those applications fusing multiple BSPs at the match result level, where each BSP is independently developed based on a different modality and has no correlation with other BSPs. The framework defined in the standard is intended as a new BioAPI framework supporting multi-modal biometric capabilities, with API functions, service provider interface (SPI) functions, and framework functions.</p> <p>This standard will enable seamless substitution of BSPs in a multi-modal biometric application by providing standard interfaces among its constituent modules. This capability will be particularly useful when an application has multiple possible combinations of BSPs to choose from, due to the availability of more than two independent BSPs. This standard will also enable prediction of the multi-modal biometric performance resulting from a particular combination of BSPs. This is made possible by defining a methodology for combining BSP match scores based on the standard interfaces. Performance prediction will be possible without actually experimenting with the application employing that BSP combination.</p>
<p>Programme of work</p> <p>If the proposed new work item is approved, which of the following document(s) is (are) expected to be developed?</p> <p><input checked="" type="checkbox"/> X a single International Standard</p> <p><input type="checkbox"/> more than one International Standard (expected number:)</p> <p><input type="checkbox"/> a multi-part International Standard consisting of parts</p> <p><input type="checkbox"/> an amendment or amendments to the following International Standard(s)</p> <p><input type="checkbox"/> a technical report , type</p>
<p>Relevant documents to be considered</p> <p>ANSI/INCITS 358-2002 – Information Technology – BioAPI Specification</p>
<p>Cooperation and liaison</p> <p>BioAPI Consortium</p> <p>NIST/BC Biometric Interoperability, Performance, and Assurance WG</p> <p>ISO/IEC JTC 1 SC 17 and SC 27</p> <p>International Biometric Group (IBG)</p> <p>UK Biometric WG (BWG)</p> <p>International Biometric Industry Association (IBIA)</p>
<p>Preparatory work offered with target date(s): September 2003</p>
<p>Signature: Kyo-Won YOON, Administrator of KATS</p> <p style="text-align: right;"><i>Kyowon Yoon</i></p>
<p>Will the service of a maintenance agency or registration authority be required?NO.....</p> <p>- If yes, have you identified a potential candidate?</p> <p>- If yes, indicate name</p> <p>Are there any known requirements for coding?NO.....</p> <p>-If yes, please specify on a separate page</p> <p>Are there any known requirements for cultural and linguistic adaptability? ...NO....</p> <p>- If yes, please specify on a separate page</p>

Does the proposed standard concern known patented items?NO.....
 - If yes, please provide full information in an annex

Comments and recommendations of the JTC 1 Secretariat –

Comments with respect to the proposal in general, and recommendations thereon:

It is proposed to assign this new item to ISO/IEC JTC 1/SC 37/SG 2.

Voting on the proposal - Each P-member of the ISO/IEC joint technical committee has an obligation to vote within the time limits laid down (normally three months after the date of circulation).

Date of circulation: 2003-05-05	Closing date for voting: 2003-08-04	Signature of JTC 1/SC 37 Secretary: Lisa A. Rajchel
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NEW WORK ITEM PROPOSAL - PROJECT ACCEPTANCE CRITERIA		
Criterion	Validity	Explanation
A Business Requirement		
A.1 Market Requirement	Essential <input checked="" type="checkbox"/> Desirable <input type="checkbox"/> Supportive <input type="checkbox"/>	There are cases when a single biometric technology is not usable for certain users due to the unavailability of the biometric trait, or its performance is insufficient for certain security requirements. Although multi-modal biometrics is one effective solution to improving biometric performance under these circumstances, its adoption has been hindered partly by lack of standards for implementing it. At present, there are no standard interfaces among modules comprising a multi-modal biometric application. Nor there exists a standard methodology for estimating how much performance gain will result from adopting multi-modal biometrics. This standard is intended for those applications fusing multiple BSPs at the match result level, where each BSP is independently developed based on a different modality and has no correlation with other BSPs. It will encourage adoption of multi-modal biometric applications by enabling easy substitution of BSPs and reliable prediction of multi-modal performance.
A.2 Regulatory Context	Essential <input type="checkbox"/> Desirable <input type="checkbox"/> Supportive <input checked="" type="checkbox"/> Not Relevant <input type="checkbox"/>	
B. Related Work		
B.1 Completion/Maintenance of current standards	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	ANSI/INCITS 358-2002 (BioAPI Specification) is a current ANSI standard. It is expected to be the basis for the definition of interface and framework functions of the multi-modal framework.
B.2 Commitment to other organization	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
B.3 Other Source of standards	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
C. Technical Status		
C.1 Mature Technology	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Multi-modal biometric technologies have been developed over many years, and started to be commercially deployed. The technology is sufficiently mature for standard definition.
C.2 Prospective Technology	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
C.3 Models/Tools	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
D. Conformity Assessment and Interoperability		
D.1 Conformity Assessment	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	The proposed standard will contain conformance requirements, and allow vendors and customers to jointly define testing to their own requirements.

D.2 Interoperability	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	The proposed standard provides for interoperability and interchangeability of biometric technologies in a multi-modal biometric system, at the API framework level.
E. Other Justification		