This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Reaffirmed as
INCITS 442:2010 (R2020)

American National Standard

for Information Technology –

Biometric Identity Assurance Services (BIAS)

INCITS 442-2010

Developed by

incits SM

*Where **IT** all begins*

Approved American National Standard

ANSI

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

INCITS 442-2010
Revision of
INCITS 442-2008

American National Standard
for Information Technology –

Biometric Identity Assurance Services (BIAS)

Secretariat

Information Technology Industry Council

Approved July 20, 2010

American National Standards Institute, Inc.

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

American National Standard

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made towards their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

CAUTION: The developers of this standard have requested that holders of patents that may be required for the implementation of the standard disclose such patents to the publisher. However, neither the developers nor the publisher have undertaken a patent search in order to identify which, if any, patents may apply to this standard. As of the date of publication of this standard and following calls for the identification of patents that may be required for the implementation of the standard, no such claims have been made. No further patent search is conducted by the developer or publisher in respect to any standard it processes. No representation is made or implied that licenses are not required to avoid infringement in the use of this standard.

Published by

American National Standards Institute, Inc.
25 West 43rd Street, New York, NY 10036

Copyright © 2010 by Information Technology Industry Council (ITI)
All rights reserved.

No part of this publication may be reproduced in any
form, in an electronic retrieval system or otherwise,
without prior written permission of ITI, 1101 K Street NW, Suite 610
Washington, DC 20005.

Printed in the United States of America

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Contents

Page

Foreword iv

1 Scope 1

2 Conformance 1

3 Normative References 2

4 Terms and Definitions 2

4.1 Biometric Sample 2

4.2 Claim to Identity 2

4.3 Encounter 2

4.4 Encounter-Centric 3

4.5 Gallery 3

4.6 Identification 3

4.7 Identity Assurance 3

4.8 Person-Centric 3

4.9 Subject 3

4.10 Verification 3

5 Symbols and Abbreviated Terms 4

6 System Context 4

6.1 Service-Oriented Architectures 4

6.2 BIAS Architecture 6

6.3 BIAS Implementation Considerations 7

7 Biometric Identity Assurance Services 9

7.1 BIAS Interface XML Schema 9

7.2 Primitive Services 10

7.2.1 Add Subject To Gallery 10

7.2.2 Check Quality 11

7.2.3 Classify Biometric Data 12

7.2.4 Create Subject 14

7.2.5 Delete Biographic Data 14

7.2.6 Delete Biometric Data 15

7.2.7 Delete Subject 16

7.2.8 Delete Subject From Gallery 17

7.2.9 Get Identify Subject Results 18

7.2.10 Identify Subject 19

7.2.11 List Biographic Data 20

7.2.12 List Biometric Data 22

7.2.13 Perform Fusion 23

7.2.14 Query Capabilities 24

7.2.15 Retrieve Biographic Information 30

7.2.16 Retrieve Biometric Information 31

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Page

7.2.17 Set Biographic Data ... 32
7.2.18 Set Biometric Data ... 33
7.2.19 Transform Biometric Data ... 35
7.2.20 Update Biographic Data ... 36
7.2.21 Update Biometric Data ... 37
7.2.22 Verify Subject ... 38

7.3 Aggregate Services ... 39
7.3.1 Enroll ... 40
7.3.2 Get Enroll Results ... 41
7.3.3 Get Identify Results ... 41
7.3.4 Get Verify Results ... 42
7.3.5 Identify ... 43
7.3.6 Retrieve Information ... 44
7.3.7 Verify ... 45

8 Data Elements and Data Types ... 46

8.1 Biographic Data ... 46
8.1.1 Biographic Data Type ... 47
8.1.2 Biographic Data Item Type ... 47
8.1.3 Biographic Data Set Type ... 48

8.2 Biometric Data ... 49
8.2.1 CBEFF BIR Type ... 49
8.2.2 CBEFF BIR List Type ... 51
8.2.3 Biometric Data Element Type ... 51
8.2.4 Biometric Data List Type ... 53

8.3 Candidate Lists ... 53
8.3.1 Candidate Type ... 53
8.3.2 Candidate List Type ... 54

8.4 Capabilities ... 54
8.4.1 Capability Type ... 55
8.4.2 Capability List Type ... 56

8.5 Fusion Information ... 56
8.5.1 Fusion Information Type ... 56
8.5.2 Fusion Information List Type ... 57

8.6 Other Data Types ... 57
8.6.1 Encounter List Type ... 57
8.6.2 Information Type ... 58
8.6.3 List Filter Type ... 58
8.6.4 Processing Options Type ... 59
8.6.5 Token Type ... 59

9 Error Handling and Notification ... 60

9.1 Successful Service Calls ... 60

9.2 Error Condition Codes ... 61

10 Security ... 62

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Page

Annexes

A Conformance Requirements 63

B Bibliography 70

C Example Usage Scenarios 71

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Foreword (This foreword is not part of American National Standard INCITS 442-2010.)

INCITS (The InterNational Committee for Information Technology Standards) is the ANSI recognized Standards Development Organization for information technology within the United States of America. Members of INCITS are drawn from Government, Corporations, Academia and other organizations with a material interest in the work of INCITS and its Technical Committees. INCITS does not restrict membership and attracts participants in its technical work from 13 different countries, and operates under the rules of the American National Standards Institute.

In the field of Biometrics, INCITS has established the Technical Committee M1. Standards developed by this Technical Committee have reached consensus throughout the development process and have been thoroughly reviewed through several Public Review processes. In addition, the INCITS Executive Board and the ANSI Board of Standards Review have approved this American National Standard for publication as an INCITS Standard.

This standard contains three annexes. Annex A is normative and is considered part of the standard. Annexes B and C are informative and are not considered part of the standard.

Requests for interpretation, suggestions for improvement or addenda, or defect reports are welcome. They should be sent to InterNational Committee for Information Technology Standards (INCITS), ITI, 1101 K Street, NW, Suite 610, Washington, DC 20005.

This standard was processed and approved for submittal to ANSI by INCITS. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, INCITS had the following members:

Don Wright, Chair
Jennifer Garner, Secretary

Organization Represented	*Name of Representative*
Adobe Systems, Inc.	Scott Foshee
	Steve Zilles (Alt.)
AIM Global, Inc.	Dan Mullen
	Charles Biss (Alt.)
Apple Computer, Inc.	Kwok Lau
	Helene Workman (Alt.)
	David Singer (Alt.)
Distributed Managment Task Force	John Crandall
	Jeff Hilland (Alt.)
Electronic Industries Alliance	Edward Mikoski, Jr.
	Henry Cuschieri (Alt.)
EMC Corporation	Gary Robinson
Farance, Inc.	Frank Farance
	Timothy Schoechle (Alt.)
Google	Zaheda Bhorat
GS1 US	Ray Delnicki
	Frank Sharkey (Alt.)
	James Chronowski (Alt.)
	Mary Wilson (Alt.)
Hewlett-Packard Company	Karen Higginbottom
	Paul Jeran (Alt.)
IBM Corporation	Gerald Lane
	Robert Weir (Alt.)
IEEE	Bill Ash
	Terry DeCourcelle (Alt.)
	Jodie Haasz (Alt.)
	Bob Labelle (Alt.)

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Organization Represented	*Name of Representative*
Intel	Philip Wennblom
	Grace Wei (Alt.)
	Stephen Balogh (Alt.)
Lexmark International	Don Wright
	Dwight Lewis (Alt.)
	Paul Menard (Alt.)
Microsoft Corporation	Jim Hughes
	Dave Welsh (Alt.)
	Mark Ryland (Alt.)
	John Calhoun (Alt.)
National Institute of Standards & Technology	Michael Hogan
	Elaine Barker (Alt.)
	Dan Benigni (Alt.)
	Fernando Podio (Alt.)
	Teresa Schwarzhoff (Alt.)
	Wo Chang (Alt.)
Oracle Corporation	Donald R. Deutsch
	Jim Melton (Alt.)]
	Michael Kavanaugh (Alt.)
	Toshihiro Suzuki (Alt.)
	Jeff Mischkinsky (Alt.)
	Tony DiCenzo (Alt.)
	Eduardo Gutentag (Alt.)
Purdue University	Stephen Elliott
Storage Networking Industry Association (SNIA)	Gary Phillips
	Arnold Jones (Alt.)
	Dave Thiel (Alt.)
US Department of Defense	Jerry Smith
	Dennis Devera (Alt.)
	Dave Brown (Alt.)
	Leonard Levine (Alt.)
US Department of Homeland Security	Peter Shebell
	Gregg Piermarini (Alt.)

Technical Committee M1, Biometrics, which reviewed this standard, had the following members:

Fernando Podio, Chair
Stephen Elliott, Vice-Chair
Catherine Tilton, International Representative

Organization Represented	*Name of Representative*
Aoptix Technologies	Dan Potter
	Mark Frederiksen (Alt.)
Authenti-Corp	Valorie Valencia
Aware, Inc.	David Benini
	Rob Mungovan (Alt.)
BearingPoint	Rish Pathak
	Ron Sutton (Alt.)
Biometrics Associates	John Hochstein
	Douglas Kozlay (Alt.)
Computer Sciences Corporation (CSC)	Rick Lazarick
Cross Match Technologies, Inc.	Greg Cannon
Daon	Cathy Tilton
	Mathew Swayze (Alt.)
Fujitsu Laboratories	Jonathan Agre
International Biometric Group LLC	Michael Thieme
	Brian Wong (Alt.)
ID Technology Partners, Inc.	Fred Herr
	Mark Jerde (Alt.)
IriTech	Dae Hoon Kim
LG Electronics	Samir Shah
	Jun Hong (Alt.)
L1 Identity Solutions	Tim Brown
	Udo Mahlmeister (Alt.)

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

Organization Represented	*Name of Representative*
MERL	Shantanu Rane
Motorola, Inc.	Artour Karaguiozian
NBSP	Ryan Triplett
	Justin Smith (Alt.)
NIST	Fernando Podio
	Patrick Grother (Alt.)
	Michael Hogan (Alt.)
	Elham Tabassi (Alt.)
	Bradford Wing (Alt.)
OSS Nokalva	Alessandro Triglia
	Paul Thorpe (Alt.)
Purdue University	Stephen Elliott
	Eric Kukula (Alt.)
	Shimon Modi (Alt.)
Recognition Systems	Samir Tamer
Retica Systems	Nick Accomando
	Yasonari Tosa (Alt.)
Sagem Morpho, Inc.	John Douglass
	Raymond Reyes (Alt.)
Sonovation	Omid Jahromi
Underwriters Laboratories	Louis Chavez
	Dave Mills (Alt.)
United States Dept. of Defense - DISA	Dennis Devera
United States Dept. of Defense - BTF	(Representation Vacant)
	Gregory Zektser (Alt.)
	Dale Hapeman (Alt.)
United States Dept. of Homeland Security	Will Graves
	John Mayer-Splain (Alt.)
	Martha Bodden (Alt.)
	Arun Vemury (Alt.)
United States Dept. of Justice / FBI	Scott Carey
	Michael McCabe (Alt.)
United States Dept. of State	Barry Kefauver
	John Atkins (Alt.)
Unisys	Steve Vlcan
UPEK	Mike Chaudoin

Task Group M1.2 on Biometric Technical Interfaces, which developed the standard, had the following members:

Fred Herr, Chairman

Organization Represented	*Name of Representative*
Aware	David Benini
Cross Match	Greg Cannon
Daon	Cathy Tilton
	Matt Swayze (Alt.)
DoD Biometric Task Force	Dale Hapeman
	Arun Vermury (Alt.)
ID Technology Partners	Fred Herr
NIST	Fernando Podio
	Mike Hogan (Alt.)
OSS Nokalva	Alessandro Triglia
Purdue University	Shimon Modi
Retica Systems	Nick Accomando
	Yasonari Tosa (Alt.)
Unisys	Steve Vlcan

This is a preview of "INCITS 442:2010 (R20...". Click here to purchase the full version from the ANSI store.

American National Standard
for Information Technology –

Biometric Identity Assurance Services (BIAS)

1 Scope

BIAS defines biometric services used for identity assurance that are invoked over a services-based framework. It is intended to provide a generic set of biometric and identity-related functions and associated data definitions to allow remote access to biometric services. To allow BIAS to be flexible to the amount and types of biographic and biometric information available to and used by a system, the terms “biographic data” and “biometric data” as used in this standard are very general.

The binding of these services to specific frameworks is not included in this project, but will be the subject of separate standards. The first such standard (for a Web services framework) is planned to be developed by OASIS by the BIAS Integration Technical Committee.

Although focused on biometrics, this standard will necessarily include support for other related identity assurance mechanisms such as biographic and token capabilities. BIAS is intended to be compatible with and used in conjunction with other biometric standards as described in clause 3.

Specification of single-platform biometric functionality (e.g., client-side capture, etc.) is not within the scope of this standard.

Integration of biometric services as part of an authentication service or protocol is not within the scope of this standard; however, it is possible that some of the basic biometric services defined herein may be used by such an implementation in the future.

2 Conformance

Annex A specifies the conformance requirements for systems/components claiming conformance to this standard.