BIAS

Biometric Identity Assurance Services

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In reviewing the current biometric-related standards portfolio and system oriented architecture (SOA) references, it became apparent that a gap existed in the availability of standards related to biometric services.
BIAS – Driving requirements

• Provide ability to remotely invoke biometric operations across an SOA infrastructure, decoupling the service from the interface (and requester) that calls it.

• Provide business level operations, without constraining the application/business logic that implements those operations.

• Provide basic capabilities that can be used to construct higher level, aggregate/composite operations.

• Be as generic as possible – technology, framework, and application domain independent.
Development of the BIAS standard requires expertise in two distinct technology domains to ensure that the final specification provides the right structure, functionality, and technical details:

- Biometrics, with standards leadership provided by INCITS M1
- Service Architectures (initially focused on Web services), with standards leadership provided by OASIS

Close collaboration between both standards organizations is required:

- Existing standards are available in both domains and many of these standards will provide the foundation and underlying capabilities upon which the biometric services depend.

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<td>Define “taxonomy”:</td>
<td>Define Web services bindings:</td>
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<td>- Identity Assurance operations</td>
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**BIAS system context (INCITS)**

- BIAS services are modular and independent operations which can be assembled in many different ways to support a variety of business processes.

- BIAS services may be implemented with differing technologies on multiple platforms.

- BIAS services can be publicly exposed directly and/or utilized indirectly in support of a service-provider’s own public services.
BIAS system context (OASIS)

- Defines a SOAP Profile to implement the “abstract” services specified in INCITS M1.

- Includes:
  - WSDL / XML schema
  - Data model / data dictionary
  - Message structure / rules
  - Error handling
  - Use cases & samples
BIAS operations

• Subject
  – Create/delete subject
  – Add/remove subject from gallery

• Biographics
  – Set/list biographic data
  – Update/delete biographic data
  – Retrieve biographic data

• Biometrics
  – Set/list biometric data
  – Update/delete biometric data
  – Retrieve biometric data

• Searching/processing
  – Verify subject
  – Identify subject
  – Check quality
  – Classify biometric data
  – Perform fusion
  – Transform biometric data

• Aggregate services
  – Enroll
  – Identify
  – Verify
  – Retrieve information

• Asynchronous results retrieval
• Query Capabilities
To meet BIAS goals, any type of biometric information needs to be able to be represented and used in the services.

BIAS utilizes the existing CBEFF standard (ISO/IEC 19785-1:2006) to represent biometric data.
- BIAS does not require any particular CBEFF patron format.
- BIAS implementations may support one or multiple CBEFF patron formats.

BIAS specification includes an XML representation of CBEFF header information.

Today, BIRs are binary (embedded Base-64 or XOP).
- Proposal to broaden to allow “pure” XML as well as BDBs only (using the XML CBEFF metadata as required) and URIs.
Representing biographic data

- BIAS provides flexibility for the amount and types of biographic data supported by implementing systems.

- BIAS provides two methods for representing biographic information:
  - A set of individual data items (name/type/value combinations)
  - An existing format, such as:
    - Electronic Fingerprint Transmission Specification (EFTS) [DOJ-CJIS]
    - National Information Exchange Model (NIEM) [DOJ/DHS]
    - xNAL: Name and Address Standard [OASIS Customer Information Quality TC]
    - HR-XML [HR-XML Consortium]
    - and others …

- Can include contextual & document information as well.
Status

• INCITS 442 published May 2008
  – Revision just initiated to address items arising from OASIS project

• OASIS BIAS SOAP Profile draft in 45-day “informal public review” which ends 7 March
  – Goal is to publish before end of the year

• Next meetings:
  – INCITS M1.2: April 14-15
  – OASIS BIAS TC: 17 March

• Need: Reference/sample implementations!
Possible relationships

- Architectural relationship
  - Possible usage within a larger business/mission application in which biometrics is one subsystem and within which multiple modalities are present
Possible relationships (cont’d)

• Data relationship
  – Voice data produced within SIV may be further exchanged within a BIAS operation. For example, if via SIV a voice data capture were performed and if that data were needed for other purposed downstream or by another system, BIAS could be used as the mechanism for exchanging that data.

• Organizational relationship
  – It is possible that the two organizations may be able to assist one another by providing a review and comment function on each other’s work.
For your attention!

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