

# Biometric Identity Assurance Services (BIAS) Soap Profile Version 2.0

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### Additional artifacts:

This prose specification is one component of a Work Product that also includes:

- XML schemas: <http://docs.oasis-open.org/bioserv/BIAS/v2.0/csprd01/schemas/>

### Related work:

This specification replaces or supersedes:

- *Biometric Identity Assurance Services (BIAS) SOAP Profile Version 1.0 Plus Errata 02*. Edited by Kevin Mangold, Matthew Swayze, and Cathy Tilton. 06 May 2014. OASIS Standard incorporating Approved Errata 02. <http://docs.oasis-open.org/bias/soap-profile/v1.0/errata02/os/biasprofile-v1.0-errata02-os-complete.html>. Latest version: <http://docs.oasis-open.org/bias/soap-profile/v1.0/errata02/biasprofile-v1.0-errata02-complete.html>.

This specification is related to:

- ISO/IEC 30108-1:2015, Biometric Identity Assurance Services (BIAS).  
[http://www.iso.org/iso/catalogue\\_detail.htm?csnumber=53228](http://www.iso.org/iso/catalogue_detail.htm?csnumber=53228)

**Declared XML namespace:**

- <http://docs.oasis-open.org/bioserv/ns/bias-2.0>

**Abstract:**

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.

**Status:**

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# 1 Introduction

## 1.1 Purpose/Scope

This Organization for the Advancement of Structured Information Standards (OASIS) Biometric Identity Assurance Services (BIAS) profile specifies how to use the eXtensible Markup Language (XML) [XML10] defined in ISO/IEC 30108-1:2015, Information technology — Biometric Identity Assurance Services [ISO/IEC-BIAS] to invoke Simple Object Access Protocol (SOAP) -based services that implement BIAS operations. These SOAP-based services enable an application to invoke biometric identity assurance operations remotely in a Services Oriented Architecture (SOA) infrastructure.

Not included in the scope of BIAS is the incorporation of biometric authentication as an integral component of an authentication or security protocol. (However, BIAS services may be leveraged to implement biometric authentication in the future.)

## 1.2 Overview

In addition to this introduction, this standard includes the following:

- Clause 2 presents the design concepts and architecture for invoking SOAP-based services that implement BIAS operations.
- Clause 3 presents the namespaces necessary to implement this profile, ISO/IEC BIAS data elements, and identifies relationships to external data definitions.
- Clause 4 specifies the content of the BIAS messages.
- Clause 5 presents the BIAS message structure, as well as rules and considerations for its application.
- Clause 6 presents information on error handling.
- Clause 7 specifies conformance requirements.
- Annexes include the OASIS BIAS XML schema/sample Web Service Definition Language (WSDL), use cases, sample code, acknowledgements, and the revision history of this profile.

## 1.3 Background

In late 2005/early 2006, a gap was identified in the existing biometric standards portfolio with respect to biometric services. The Biometric Identity Assurance Services standard proposal was for a collaborative effort between government and private industry to provide a services-based framework for delivering identity assurance capabilities, allowing for platform and application independence. This standard proposal required the attention of two major technical disciplines: biometrics and service architectures. The expertise of both disciplines was required to ensure the standard was technically sound, market relevant, and achieved widespread adoption. The International Standards Organization and the International Electrotechnical Commission (ISO/IEC) provided the standards leadership relevant to biometrics, defining the “taxonomy” of biometric operations and data elements. OASIS provided the standards leadership relevant to service architectures with an initial focus on web services, defining the schema and SOAP messaging.

The driving requirements of the BIAS standard proposal were to provide the ability to remotely invoke biometric operations across an SOA infrastructure; to provide business level operations without constraining the application/business logic that implements those operations; to be as generic as possible – technology, framework, & application domain independent; and to provide basic capabilities that can be used to construct higher level, aggregate/composite operations.



## 1.4 Relationship to Other Standards

This OASIS BIAS profile comprises a companion standard to ISO/IEC 30108-1:2015, Information technology — Biometric Identity Assurance Services, which defines the BIAS requirements and taxonomy, specifying the identity assurance operations and the associated data elements. This OASIS BIAS profile specifies the design concepts and architecture, data model and data dictionary, message structure and rules, and error handling necessary to invoke SOAP-based services that implement BIAS operations.

Together, the BIAS standard and the BIAS profile provide an open framework for deploying and remotely invoking biometric-based identity assurance capabilities that can be readily accessed across an SOA infrastructure.

This relationship allows the leveraging of the biometrics and web services expertise of the two standards development organizations. 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.

## 1.5 Terminology

The key words “MUST”, “MUST NOT”, “REQUIRED”, “SHALL”, “SHALL NOT”, “SHOULD”, “SHOULD NOT”, “RECOMMENDED”, “MAY”, and “OPTIONAL” in this document are to be interpreted as described in [RFC2119].

The following additional terms and definitions are used:

Note: The terms and definitions specified in ISO/IEC 30801-1 [ISO/IEC-BIAS] also apply to this Standard.

BIAS operation and data element names are not defined here, but in their respective sections.

### **BIAS**

Biometric Identity Assurance Services

### **BIR**

Biometric Information Record

### **ESB**

Enterprise Service Bus

### **HTTP**

HyperText Transfer Protocol

### **HTTPS**

HyperText Transfer Protocol over SSL or HTTP Secure

### **IRI**

Internationalized Resource Identifier

### **SOA**

Service-Oriented Architecture

### **SOAP**

Simple Object Access Protocol

### **SSL**

Secure Sockets Layer

### **TLS**

Transport Layer Security

### **UDDI**

87 Universal Description, Discovery, and Integration

88 **URI**

89 Uniform Resource Identifier

90 **VPN**

91 Virtual Private Network

92 **WSDL**

93 Web Services Description Language

94 **WSS**

95 Web Services Security

96 **XML**

97 eXtensible Markup Language

98

99

100 **CBEFF**

101 Common Biometric Exchange Formats Framework - data elements and BIR formats specified in

102 ISO/IEC 19785-1

103 **BIAS implementation**

104 software entity that is capable of creating, processing, sending, and receiving BIAS messages

105 **BIAS endpoint**

106 runtime entity, identified by an endpoint URI/IRI, capable of sending and receiving BIAS

107 messages, and containing a running BIAS implementation

108 **BIAS message**

109 message that can be sent from a BIAS endpoint to another BIAS endpoint through a BIAS link

110 channel

111 **BIAS request message**

112 BIAS message conveying a request for an action to be performed by the receiving BIAS endpoint

113 **BIAS response message**

114 BIAS message conveying a response to a prior BIAS requestmessage

## 115 1.6 References

### 116 1.6.1 Normative References

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<http://www.iso.org>

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[http://www.oasis-open.org/committees/tc\\_home.php?wg\\_abbrev=cig](http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=cig)

## 2 Design Concepts and Architecture (non-normative)

### 2.1 Philosophy

Rather than define a totally new and unique messaging protocol for biometric services, this specification instead defines a method for using existing biometric and Web services standards to exchange biometric data and perform biometric operations.

### 2.2 Context

Today, biometric systems are being developed which collect, process, store and match biometric data for a variety of purposes. In many cases, data and/or capabilities need to be shared between systems or systems serve a number of different client stakeholders. As architectures move towards services-based frameworks, access to these biometric databases and services is via a Web services front-end. However, lack of standardization in this area has led implementers to develop customized services for each system/application.

BIAS is intended to provide a common, yet flexible, Web services interface that can be used within both closed and open SOA systems. Figure 1, below, depicts the context in which the BIAS messages will be implemented.

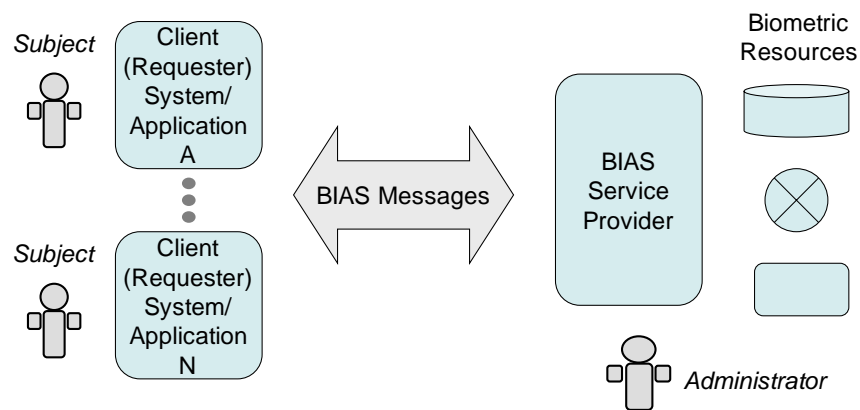


Figure 1. BIAS Context

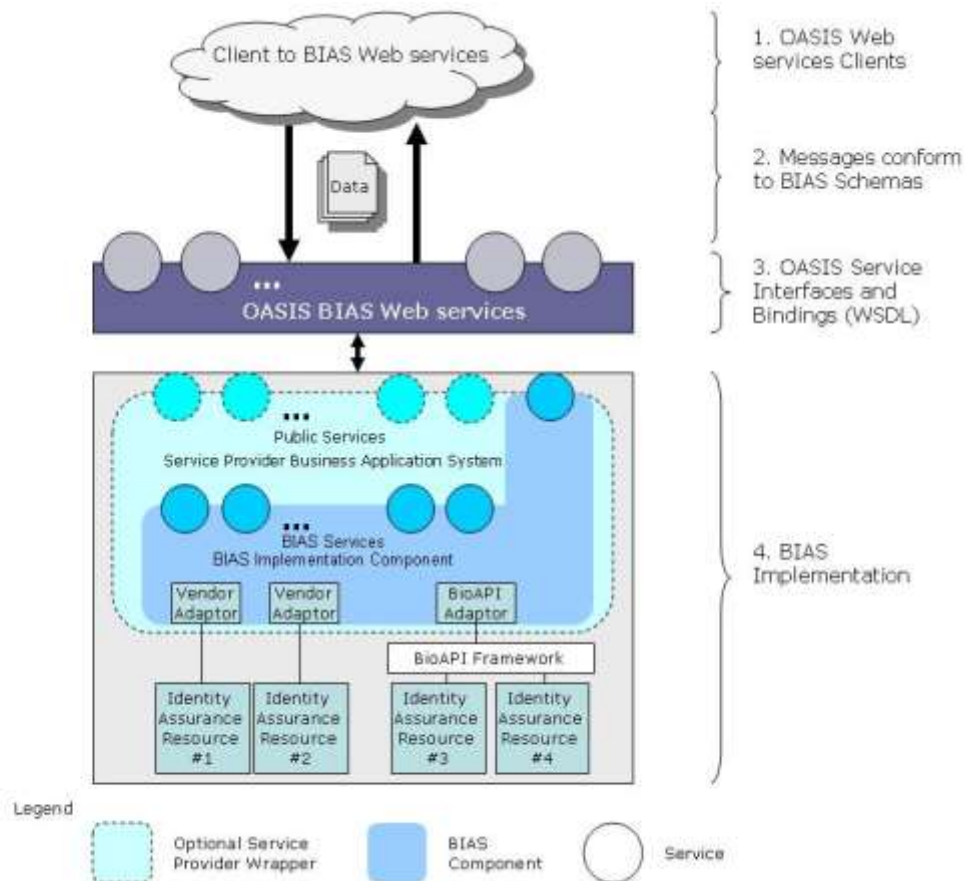
The clients (requesters) may use standard discovery mechanisms (i.e., UDDI directories) to discover the BIAS service provider (implementation) or, particularly in closed systems, the URI/IRI and WSDL for the service provider may be known *a priori* by the client BIAS application developer.

### 2.3 Architecture

BIAS Web services are intended to be used within systems employing a services framework, such as a services-oriented architecture (SOA) (although implementations are not limited to this environment). As such, it is recognized that the clients may interact directly with the BIAS service provider or layers may exist between the client and the service provider, for example as an ESB or other application layer.

The BIAS Architecture as shown in Figure 2, in which:

- A Client request to the BIAS Web services may be triggered by a human interaction OR any proxy system such as an ESB.
  - Client sends and receives SOAP messages that conform to the BIAS schemas
  - Calls to the BIAS Implementation use OASIS Service Interfaces and Bindings (via WSDL)
  - The BIAS implementation maps the service call to the appropriate internal API or set of APIs and returns data according to the service interface.
- Note that services are represented as circles.



**Figure 2. Representative BIAS Architecture**

NOTE: It is possible that BIAS may also be used between the service provider and the managed resource (e.g., a biometric matcher).

At the heart of the BIAS SOAP Profile are the concepts of BIAS messages and endpoints.

### **BIAS implementation**

A BIAS implementation is a software entity that is capable of creating, processing, sending, and receiving BIAS messages. This standard does not define requirements for the BIAS implementation other than defining the messages and protocols used by the endpoints.

### **BIAS messages**

268 A BIAS message is a one that can be sent from a BIAS endpoint to another BIAS endpoint over a TCP/IP  
269 link.

270 ***BIAS endpoints***

271 A BIAS endpoint is a runtime entity, uniquely identified and accessed by an endpoint URI/IRI [[URI](#)] [[IRI](#)],  
272 capable of sending and receiving BIAS messages.

273 NOTE: When not publicly and directly exposed, the endpoints for purposes of this specification are  
274 the BIAS service provider exposing BIAS services and the component that directly interacts with that  
275 service provider, e.g., the business application or ESB, rather than the ultimate end client requester.

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## 3 Data Dictionary

This section describes the BIAS data elements used within BIAS messages (as defined in Clause 4). Common data elements are defined for use in one or more operations. These include common data types or return codes. BIAS data elements are defined in ISO/IEC 30108-1. The elements, complex types and simple types described for the BIAS messages belong to the following namespace: <http://docs.oasis-open.org/bias/ns/bias-2.0/>. See Annex A for the XML schema.

NOTE: Biographic and biometric data included in a native XML format MAY contain elements referencing external namespaces (e.g., ansi-nist).

### 3.1 Documentation Conventions

Each common element has a section describing its content. Likewise, each operation has a section describing the request and response messages and the associated input and output parameters. The input and output of each message and the comment elements are detailed in a table as described in the figure below. Each field that forms part of the message request/response is detailed in the table.

Header Name	Description	Values	Value Meaning
Field	The name of the field.		
Type	The XML schema type of the field.		
#	The cardinality of the field	1	One occurrence
		0..1	Zero or one occurrence
		0..*	Zero or more occurrences
		1..*	One or more occurrences
?	Defines if the field must be present.	Y	Yes – is always required
		N	No – is not always required, an optional field.
		C	Conditional – requirement is dependent on system or message conditions.
Meaning	Gives a short description of the field's use		

Figure 3. BIAS Message Input/Output Dictionary Table Headings

#### **Fields Hierarchy Explained:**

To denote the field hierarchy the symbol  $\uparrow$  is used to denote the child-of relationship.

All string types/elements MUST consist of ISO/IEC 10646 (Unicode) characters encoded in UTF-8 [UTF-8] (see ISO/IEC 10646:2003, Annex D).



## 300 3.2 Common Elements

### 301 3.2.1 ApplicationIdentifier

<b>Type:</b>	string
<b>Description:</b>	Identifies an application.
<b>Min Length:</b>	1
<b>Max Length:</b>	255

### 302 3.2.2 ApplicationUserIdentifier

<b>Type:</b>	string
<b>Description:</b>	Identifies an application user or instance.
<b>Min Length:</b>	1
<b>Max Length:</b>	255

### 303 3.2.3 BaseBIRType

<b>Type:</b>	Schema complexType
<b>Description:</b>	Base type for all BIR subtypes; see <a href="#">BinaryBIR</a> , <a href="#">URI_BIR</a> , and <a href="#">XML_BIR</a> for currently available types.

### 304 3.2.4 BIASBiometricDataType

Field	Type	#	?	Meaning
BIASBiometricDataType			Y	Wraps the various BIAS biometric types. The operations that use this type specify which elements are required.
↑ BIRList	<a href="#">CBEFF_BIR_ListType</a>	0..1	N	A list of CBEFF-BIR elements.
↑ BIR	<a href="#">CBEFF_BIR_Type</a>	0..1	N	Contains biometric information in either a non-XML or an XML representation.
↑ InputBIR	<a href="#">CBEFF_BIR_Type</a>	0..1	N	Maps to specific ISO/IEC BIAS elements as required by that specification.
↑ ReferenceBIR	<a href="#">CBEFF_BIR_Type</a>	0..1	N	Maps to specific ISO/IEC BIAS elements as required by that specification.
↑ BiometricDataList	<a href="#">BiometricDataListType</a>	0..1	N	A list of biometric data elements.

### 305 3.2.5 BIASFaultCode

<b>Type:</b>	String
<b>Description:</b>	Error code referenced in a SOAP fault.

### 306 BIASFaultCode Enumeration Values

Value	Description
UNKNOWN_ERROR	The service failed for an unknown reason.
UNSUPPORTED_CAPABILITY	A requested capability is not supported by the service implementation.
INVALID_INPUT	The data in a service input parameter is invalid.
BIR_QUALITY_ERROR	Biometric sample quality is too poor for the service to succeed.
INVALID_BIR	The input BIR is empty or in an invalid or unrecognized format.
BIR_SIGNATURE_FAILURE	The service could not validate the signature, if used, on the input BIR.
BIR_DECRYPTION_FAILURE	The service could not decrypt an encrypted input BIR.
INVALID_ENCOUNTER_ID	The input encounter ID is empty or in an invalid format.
INVALID_SUBJECT_ID	The input subject ID is empty or in an invalid format.
UNKNOWN_SUBJECT	The subject referenced by the input subject ID does not exist.
UNKNOWN_GALLERY	The gallery referenced by the input gallery ID does not exist.
UNKNOWN_ENCOUNTER	The encounter referenced by the input encounter ID does not exist.
UNKNOWN_BIOGRAPHIC_FORMAT	The biographic data format is not known or not supported.
UNKNOWN_IDENTITY_CLAIM	The identity referenced by the input identity claim does not exist.
INVALID_IDENTITY_CLAIM	The identity claim requested is already in use.
NONEXISTANT_DATA	The data requested for deletion does not exist.
UNKNOWN_DOCUMENT_CATEGORY	The data requested does not exist.
INVALID_TOKEN	The data requested does not exist.
TOKEN_EXPIRED	The data requested does not exist.
DUPLICATE_ENCOUNTER	The input encounter ID for a new encounter already exists for that subject.

Value	Description
IDENTIFICATION_RESULT_NOT_YET_AVAILABLE	The result of an asynchronous identification process is not yet available.

### 307 3.2.6 BIASFaultDetail

Field	Type	#	?	Meaning
BIASFaultDetail			Y	Defines the error information associated with a SOAP fault.
↗ BIASFaultType	<a href="#">BIASFaultCode</a>	1	Y	References an error code.
↗ BIASFaultMessage	string	1	Y	Provides a brief explanation of the fault.
↗ BIASFaultDescription	string	0..1	N	Provides detailed information about a BIAS fault, such as trace details.

### 308 3.2.7 BIASIdentity

Field	Type	#	?	Meaning
BIASIdentity			Y	Defines a single element for encapsulating the data associated with an Identity. Includes the Identity's reference identifiers, biographic data, and biometric data.  The operations that use this type specify which elements are required.
↗ SubjectID	<a href="#">BIASIDType</a>	0..1	C	A system unique identifier for a subject.  Required as input to many operations.
↗ IdentityClaim	<a href="#">BIASIDType</a>	0..1	N	An identifier by which a subject is known to a particular gallery or population group.
↗ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.  Required for encounter-centric models.
↗ EncounterList	<a href="#">EncounterListType</a>	0..1	N	A list of encounters associated with a subject.
↗ BiographicData	<a href="#">BiographicDataType</a>	0..1	N	An Identity's biographic data.
↗ BiometricData	<a href="#">BIASBiometricDataType</a>	0..1	N	An Identity's biometric data.

### 3.2.8 BIASIDType

<b>Type:</b>	string
<b>Description:</b>	A BIAS Identifier.

### 3.2.9 BinaryBIR

Field	Type	#	?	Meaning
BinaryBIR	BaseBIRType		Y	Defines a BIR type of Binary
↑ Binary	base64Binary	1	Y	BIR information in base64 binary format

### 3.2.10 BiographicDataItemType

Field	Type	#	?	Meaning
BiographicDataItemType			Y	Defines a single biographic data element.
↑ Name	string	1	Y	The name of the biographic data item.
↑ Type	string	1	Y	The data type for the biographic data item.
↑ Value	string	0..1	N	The value assigned to the biographic data item.

NOTE: This element can be used to transmit scanned identity documents or document information (e.g., passports, driver's license, birth certificates, utility bills, etc. required to establish an identity).

### 3.2.11 BiographicDataItemListType

Field	Type	#	?	Meaning
BiographicDataItemListType			Y	Defines a list of biographic data elements.
↑ BiographicDataItem	<a href="#">BiographicDataItemType</a>	1..*	Y	Data structure containing information about a biographic record.

### 3.2.12 BiographicDataListType

Field	Type	#	?	Meaning
BiographicDataListType			Y	Defines a list of biographic data.
↑ BiographicData	<a href="#">BiographicDataType</a>	0..*	N	Data structure containing information about a biographic record.

### 3.2.13 BiographicDataSetType

Field	Type	#	?	Meaning
BiographicDataSetType			Y	Defines a set of biographic data that is formatted according to the specified format.
↑ name	string	1	Y	The name of the biographic data format. Use these names for common formats: FBI-EFTS [ <a href="#">EFTS</a> ], FBI-EBTS [ <a href="#">EBTS-FBI</a> ], DOD-EBTS [ <a href="#">EBTS-DOD</a> ], INT-I [ <a href="#">INT-I</a> ], NIEM [ <a href="#">NIEM</a> ], xNAL [ <a href="#">xNAL</a> ], HR-XML [ <a href="#">HR-XML</a> ].

Field	Type	#	?	Meaning
↑ version	string	0..1	N	The version of the biographic data format (e.g., “7.1” for FBI-EFTS or “2.0” for NIEM).
↑ source	string	1	Y	Reference to a URI/IRI describing the biographic data format. For example: (FBI-EFTS and FBI-EBTS) <a href="http://www.fbibiospecs.org">www.fbibiospecs.org</a> , (DOD-EBTS) <a href="http://www.biometrics.dod.mil">www.biometrics.dod.mil</a> , (INT-I) <a href="http://www.interpol.int">www.interpol.int</a> , (NIEM) <a href="http://www.niem.gov">www.niem.gov</a> , (xNAL) <a href="http://www.oasis-open.org">www.oasis-open.org</a> , (HR-XML) <a href="http://www.hr-xml.org">www.hr-xml.org</a> .
↑ type	string	1	Y	The biographic data format type. Use these types for common formats: ASCII (e.g., for non-XML versions of FBI-EFTS, FBI-EBTS, DOD-EBTS, or INT-I), XML (e.g., for NIEM, xNAL, and HR-XML or future versions of FBI-EBTS).
↑ unspecified	any	0..*	N	Biographic data formatted according to a specific format.

NOTE: Biographic data formats are not limited to those listed. The string value is not enumerated. If one of the common types are used, it MUST be indicated by the specified name values; however, the service provider MAY offer other formats. See ISO/IEC 30108 for further information.

### 3.2.14 BiographicDataType

Field	Type	#	?	Meaning
BiographicDataType			Y	Defines a set of biographic data elements, utilizing either the <a href="#">BiographicDataItemListType</a> to represent a list of elements or the <a href="#">BiographicDataSetType</a> to represent a complete, formatted set of biographic information. One of the following elements must be present.
↑ LastName	string	0..1	N	The last name of a subject.
↑ FirstName	string	0..1	N	The first name of a subject.
↑ BiographicDataItem	<a href="#">BiographicDataItem</a>	0..1	N	A list of biographic data elements.
↑ BiographicDataItem	<a href="#">BiographicDataItem</a>	1..*	Y	A single biographic data element.
↑ BiographicDataSet	<a href="#">BiographicDataSet</a>	0..1	N	A set of biographic data information.

NOTE: The implementer is given three choices for encoding biographic data:

- Encode only first and last name using the defined fields within BiographicDataType
- Define a list of biographic data elements using the BiographicDataItemListType
- Use a pre-defined set of biographic data (e.g., as specified in another standard) using the BiographicDataSetType.

See also ISO/IEC 30108-1, section 8.1 for further information.

327 **3.2.15 BiometricDataType**

Field	Type	#	?	Meaning
BiometricDataType			Y	Provides descriptive information about biometric data, such as the biometric type, subtype, and format, contained in the BDB of the CBEFF-BIR.
↑ BiometricType	<a href="#">oasis_cbeff:MultipleTypesType</a>	1	Y	The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.
↑ BiometricTypeCount	positiveInteger	0..1	N	The number of biometric records having the biometric type recorded in the biometric type field.
↑ BiometricSubType	<a href="#">oasis_cbeff:SubtypeType</a>	0..1	N	More specifically defines the type of biometric data stored in the biometric record, as defined by CBEFF.
↑ BDBFormatOwner	positiveInteger	1	Y	Identifies the standards body, working group, industry consortium, or other CBEFF biometric organization that has defined the format for the biometric data.
↑ BDBFormatType	positiveInteger	1	Y	Identifies the specific biometric data format specified by the CBEFF biometric organization recorded in the BDB Format Owner field.

328 **3.2.16 BiometricDataListType**

Field	Type	#	?	Meaning
BiometricDataListType			Y	A list of biometric data elements.
↑ BiometricDataRecord	<a href="#">BiometricDataType</a>	0..*	N	Data structure containing information about a biometric record.

329 **3.2.17 CandidateListResultType**

Field	Type	#	?	Meaning
CandidateListResultType			Y	Defines a set of candidates, utilizing the <a href="#">CandidateType</a> to represent each element in the set.
↑ CandidateList	<a href="#">CandidateListType</a>	1	Y	The candidate list.

### 330 3.2.18 CandidateListType

Field	Type	#	?	Meaning
CandidateListType			Y	Defines a set of candidates, utilizing the <a href="#">CandidateType</a> to represent each element in the set.
↑ Candidate	<a href="#">CandidateType</a>	0..*	N	A single candidate.

### 331 3.2.19 CandidateType

Field	Type	#	?	Meaning
CandidateType			Y	Defines a single candidate as a possible match in response to a biometric identification request.
↑ ScoreList		0..1	N	A list of comparison(s) scores and optionally the type and subtype of the relating biometric
↑ Score	<a href="#">ScoreType</a>	1	Y	The match score.
↑ Rank	integer	1	Y	The rank of the candidate in relation to other candidates for the same biometric identification operation.
↑ Identity				
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	Y	The identifier of the subject.
↑ BiographicData	<a href="#">BiographicDataType</a>	0..1	N	Biographic data associated with the candidate match.
↑ BIRList	<a href="#">CBEFF_BIR_ListType</a>	1	Y	Biometric data associated with the candidate match.

### 332 3.2.20 CapabilityListType

Field	Type	#	?	Meaning
CapabilityListType			Y	Defines a set of capabilities.
↑ Capability	<a href="#">CapabilityType</a>	0..*	N	A single capability.

### 333 3.2.21 CapabilityName

<b>Type:</b>	string
<b>Description:</b>	A list of capability items.

### 334 CapabilityName Enumeration Values

Value	Description
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Value	Description
AggregateInputDataOptional	<p>A data element accepted as optional input by the implementing system for the aggregate services.</p> <p>The Capability Value should be set to the name of the data element that will be accepted by the aggregate services.</p> <p>The Capability Supporting Value that indicates the which services support the data element, using one or more of the following values, each separated by a comma:</p> <p>“Delete”  “Enroll”  “Identify”  “Verify”  “All”</p>
AggregateInputDataRequired	<p>A data element required as input by the implementing system for the aggregate services.</p> <p>The Capability Value should be set to the name of the data element that will be accepted by the aggregate services.</p> <p>The Capability Supporting Value that indicates the which services support the data element, using one or more of the following values, each separated by a comma:</p> <p>“Delete”  “Enroll”  “Identify”  “Verify”  “All”</p>



Value	Description
AggregateProcessingOption	<p>A processing option supported by the implementing system for the aggregate services.</p> <p>The Capability Value should be set to the option identifier, or “key” field, for the Processing Option parameter in the aggregate services.</p> <p>The Capability Supporting Value that indicates the option value, or “value” field, for the Processing Option parameter in the aggregate services, if applicable.</p> <p>The Capability Additional Info should indicate which aggregate services support the processing option, using one or more of the following values, each separated by a comma:</p> <p>“Delete”  “Enroll”  “Identify”  “Verify”  “Retrieve”  “All”</p>
AggregateReturnData	<p>A data element returned by the implementing system for the aggregate services.</p> <p>The Capability Value should be set to the name of the data element that will be returned by the aggregate services.</p> <p>The Capability Supporting Value that indicates which services support the data element, using one or more of the following values, each separated by a comma:</p> <p>“Delete”  “Enroll”  “Identify”  “Verify”  “Retrieve”  “All”</p>

Value	Description
AggregateServiceDescription	<p>Describes the processing logic of an aggregate service supported by the implementing system.</p> <p>The Capability Value should be set to the name of the data element that describes the aggregate services.</p> <p>The Capability Supporting Value that indicates the which services support the data element, using one or more of the following values, each separated by a comma:</p> <p>“Delete”  “Enroll”  “Identify”  “Verify”  “Retrieve”</p>
BiographicDataSet	<p>Identifies a biographic data set supported by the implementing system.</p> <p>The Capability Value should contain the name of the biographic data format supported by the implementing system (e.g. “EBTS” or “NIEM”).</p> <p>The Capability Supporting Value should contain the version of the biographic data format supported by the implementing system.</p> <p>The Capability Additional Info should contain the biographic data format type supported by the implementing system (e.g. ASCII or XML).</p>
CBEFFPatronFormat	<p>A patron format supported by the implementing system.</p> <p>The Capability Value should contain the format owner.</p> <p>The Capability Supporting Value should contain the format type.</p>
ClassificationAlgorithmType	<p>A classification algorithm type supported by the implementing system.</p> <p>The Capability Value should contain the name of classification alogorithm type supported by the implementing system.</p>

Value	Description
ConformanceClass	<p>Identifies the conformance class of the BIAS implementation.</p> <p>The Capability Value should be set to one of the following:</p> <ul style="list-style-type: none"> <li>1 – (Class 1 conformance)</li> <li>2 – (Class 2 conformance)</li> <li>3 – (Class 3 conformance)</li> <li>4 – (Class 4 conformance)</li> <li>5 – (Class 5 conformance)</li> <li>6 – (Class 6 conformance)</li> <li>7 – (Class 7 conformance)</li> </ul>
Gallery	<p>A gallery or population group supported by the implementing system.</p> <p>The Capability Value should be the same as the value used for the Gallery ID parameter in the <a href="#">Add Subject to Gallery</a>, <a href="#">Delete Biographic Data</a>, <a href="#">Delete Biometric Data</a>, <a href="#">Delete Subject From Gallery</a>, <a href="#">Identify Subject</a>, <a href="#">Retrieve Biographic Data</a>, <a href="#">Retrieve Biometric Data</a>, <a href="#">Retrieve Document Data</a>, <a href="#">Set Biographic Data</a>, <a href="#">Set Biometric Data</a>, <a href="#">Set Document Data</a>, and <a href="#">Verify Subject</a> Services.</p>
IdentityModel	<p>Identifies whether the implementing system is person-centric or encounter-centric based.</p> <p>The Capability Value shall be set to one of the following:</p> <ul style="list-style-type: none"> <li>“person”</li> <li>“encounter”</li> </ul>
MatchAlgorithm	<p>A match algorithm vendor and algorithm vendor product ID supported by the implementing system.</p> <p>The Capability Value shall contain the algorithm vendor.</p> <p>The Capability Supporting Value shall contain the algorithm vendor product ID.</p> <p>The Capability Additional Info shall be set to the biometric type (defined by the XML Patron Format in ISO/IEC 19785-3) that corresponds to the match algorithm.</p> <p>The Capability Description shall contain the software version of the match algorithm.</p>

Value	Description
MatchScore	<p>Identifies the use of match scores returned by the implementing system.</p> <p>The Capability Value shall be set to the end-of-score-range that signifies a match.</p> <p>The Capability Supporting Value shall be set to the end-of-score-range that signifies a no-match.</p> <p>The Capability Additional Info shall be set to the biometric type (defined by the XML Patron Format in ISO/IEC 19785-3) that corresponds to the match score range.</p>
QualityAlgorithm	<p>A quality algorithm vendor and algorithm vendor product ID supported by the implementing system.</p> <p>The Capability Value shall contain the algorithm vendor.</p> <p>The Capability Supporting Value shall contain the algorithm vendor product ID.</p> <p>The Capability Additional Info shall be set to the biometric type (defined by the XML Patron Format in ISO/IEC 19785-3) that corresponds to the quality algorithm.</p> <p>The Capability Description shall contain the software version of the quality algorithm.</p>
SupportedBiometric	<p>A biometric type supported by the implementing system.</p> <p>The Capability Value shall be set to the biometric type, as defined by the ZML Patron Format in ISO/IEC 19785-3 (for example, the biometric type for face is represented a "face").</p> <p>The Capability Supporting Value shall indicate if the implementing system supports matching for the biometric type, using one of he following values:</p> <p>"1" (identification)</p> <p>"2" (verification)</p> <p>"3" (identification and verification)</p> <p>"4" (no comparison supported)</p>

Value	Description
TransformOperation	<p>A transform operation type supported by the implementing system.</p> <p>The Capability Value shall be equal to the value for the Transform Operation parameter in the Transform Biometric Data service.</p> <p>The Capability Supporting Value shall specify the value of the Transform Control parameter in the <a href="#">Transform Biometric Data</a> service. The value returned may be either a single value or a range of values. If a range of values is returned, the Capability Description shall specify additional information for the value of the Transform Control parameter. If the Transform Operation does not support a Transform Control, the Capability Supporting value shall be set to "NotApplicable".</p>

### 335 3.2.22 CapabilityType

Field	Type	#	?	Meaning
CapabilityType			Y	Defines a single capability supported by an implementing system.
↗ CapabilityName	<a href="#">CapabilityName</a>	1	Y	The name of the capability.
↗ CapabilityID	string	0..1	N	An identifier assigned to the capability by the implementing system.
↗ CapabilityDescription	string	0..1	N	A description of the capability.
↗ CapabilityValue	string	0..1	N	A value assigned to the capability.
↗ CapabilitySupportingValue	string	0..1	N	A secondary value supporting the capability.
↗ CapabilityAdditionalInfo	string	0..1	N	Contains additional information for the supported capability.

### 336 3.2.23 CBEFF\_BIR\_ListType

Field	Type	#	?	Meaning
CBEFF_BIR_ListType			Y	A list of CBEFF-BIR elements.
↗ BIR	<a href="#">CBEFF_BIR_Type</a>	0..*	N	CBEFF structure containing information about a biometric sample.

### 337 3.2.24 CBEFF\_BIR\_Type

Field	Type	#	?	Meaning
CBEFF_BIR_Type			Y	Represents biometric information, with either a non-XML or XML representation.
↗ FormatOwner	positiveInteger	1	Y	Identifies the Patron format owner.

Field	Type	#	?	Meaning
↑ FormatType	positiveInteger	1	Y	Identifies the Patron format type.
↑ BIR_Information		0..1	N	Describes what is contained in a BIR.
↑ BIR_Info	oasis_cbeff:BIRInfoType	0..1	N	Contains information about the CBEFF-BIR.
↑ BDB_Info	oasis_cbeff:BDBInfoType	0..1	N	Contains information about the BDB in a simple CBEFF-BIR.
↑ SB_Info	oasis_cbeff:SBIInfoType	0..1	N	Contains information about the security block, if used, in a simple CBEFF-BIR.
↑ BIR	<a href="#">BaseBIRType</a>	1	Y	One of the following sub-elements must be present: <a href="#">BinaryBIR</a> , <a href="#">URI_BIR</a> , or <a href="#">XML_BIR</a> .

NOTE: The implementer is given three choices for encoding a BIR:

- As an XML BIR (following the XML Patron format as specified in Annex B)
- As a reference to a URI (from which the receiver would retrieve the actual BIR)
- As a complete Base64 encoded binary (non-XML) BIR.

The latter two alternatives can use any CBEFF Patron Format. The optional BIR\_Information provides a mechanism for exposing metadata associated with a BIR format that is not easily decoded (i.e., a non-XML BIR). See section 5.3 for more information on handling of binary data within BIAS and ISO/IEC 30108, Clause 8.2, for more information on representing biometric data.

NOTE:

- (1) XML BIRs MUST conform to the XML patron format in Annex B; however, non-XML (binary) and URI BIRs MAY implement any CBEFF patron format.
- (2) It is RECOMMENDED that only registered CBEFF patron formats be used; however, in closed systems, this may not be required.

### 3.2.25 Classification

<b>Type:</b>	string
<b>Description:</b>	The result of a classification.

### 3.2.26 ClassificationAlgorithmType

<b>Type:</b>	string
<b>Description:</b>	Type of classification algorithm that was used to perform the classification.

### 358 3.2.27 ClassificationData

Field	Type	#	?	Meaning
ClassificationData			Y	Contains information on classification results and the algorithm used to determine the classification.
└ Classification	<a href="#">Classification</a>	1	Y	The result of the classification.
└ ClassificationAlgorithmType	<a href="#">ClassificationAlgorithmType</a>	1	Y	Identifies the type of classification algorithm that was used to perform the classification.

### 359 3.2.28 DocumentDataType

Field	Type	#	?	Meaning
DocumentDataType			Y	Defines a set of document data elements providing information about the presented identity document.
└ DocumentCategory	string	1	Y	The type of identity document presented (e.g. passport).
└ DocumentIDNumber	string	0..1	N	The number associated with the identity document (e.g. passport number)
└ DocumentIssuanceCountryCode	iso_3166_1:CountryAlpha2CodeType	0..1	N	The ISO 2-character code for the country which issued the document or from within which it was issued.
└ DocumentIssuingOrganization	string	0..1	N	The entity which issued the identity document.
└ DocumentIssuanceDate	datetime	0..1	N	The date upon which the identity document was issued.

Field	Type	#	?	Meaning
DocumentExpirationDate	datetime	0..1	N	The date upon which the identity document is no longer valid (expires).
DocumentLastName	string	0..1	N	The family name of the person to whom the identity document was issued, as contained within the document itself.
DocumentFirstName	string	0..1	N	The first given name of the person to whom the identity document was issued, as contained within the document itself.
DocumentMiddleName	string	0..1	N	The second given name of the person to whom the identity document was issued, as contained within the document itself.
DocumentValidity	boolean	0..1	N	The assessed validity of the identity document (e.g. as the result of local or online validity checks).
DocumentValidityText	string	0..1	N	Details or remarks associated with the assessed validity (e.g. description of validity issue).
DocumentImage	xsd:base64binary	0..1	N	A scanned image of the subject document (e.g. passport picture page).

### 360 3.2.29 DocumentDataListType

Field	Type	#	?	Meaning
DocumentDataListType			Y	Provides a list of documents.



Field	Type	#	?	Meaning
↑ DocumentData	<a href="#">DocumentDataType</a>	0..*	Y	Data structure containing information about a document and optionally an image of that document.

### 361 3.2.30 EncounterCategoryType

<b>Type:</b>	String
<b>Description:</b>	Identifies the type of encounter (interaction) during which the identity (biographic, biometric, and/or document) data was collected from the subject as determined by the requester.

### 362 EncounterCategoryType Enumeration Values

Value	Description
Enrollment	The encounter is created during an enrolment interaction.
Recognition	The encounter is created during a recognition interaction.
Unspecified	The type of encounter is unknown.

### 363 3.2.31 EncounterListType

Field	Type	#	?	Meaning
EncounterListType			Y	Defines a set of encounters.
↑ EncounterID	<a href="#">BIASIDType</a>	0..*	N	The identifier of an encounter.

### 364 3.2.32 FusionDecision

<b>Type:</b>	string
<b>Description:</b>	The match decision assigned by the matching algorithm

### 365 3.2.33 FusionIdentityListType

Field	Type	#	?	Meaning
FusionIdentityListType			Y	Contains fusion input elements for one or more identities, utilizing the FusionInformationListType to represent a single set of fusion information for each identity.
↑ FusionIdentity	<a href="#">FusionInformationListType</a>	0..*	Y	A set of fusion information for a single identity.

### 366 3.2.34 FusionInformationListType

Field	Type	#	?	Meaning
FusionInformationListType			Y	Contains at a minimum two sets of fusion input elements, as input to the <a href="#">PerformFusion</a> operation.
↑ FusionElement	<a href="#">FusionInformationType</a>	2..*	Y	A set of fusion information.

### 367 3.2.35 FusionInformationType

Field	Type	#	?	Meaning
FusionInformationType			Y	Represents the information necessary to perform a fusion operation.
↑ BiometricType	oasis_cbeff:MultipleTypesType	1	Y	The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.
↑ BiometricSubType	oasis_cbeff: SubtypeType	0..1	N	More specifically defines the type of biometric data stored in the biometric record.
↑ AlgorithmOwner	string	1	Y	The owner or vendor of the algorithm used to determine the score or decision.
↑ AlgorithmType	string	1	Y	The Algorithm Owner's identifier for the specific algorithm product and version used to determine the score or decision.
↑ FusionResult	<a href="#">FusionResult</a>	0..1	C	Either <a href="#">FusionScore</a> or a <a href="#">FusionDecision</a> element MUST be used.

### 368 3.2.36 FusionResult

<b>Type:</b>	complexType
<b>Description:</b>	The base type for any resulting types which indicate the status of a Fusion operation

### 369 3.2.37 FusionScore

<b>Type:</b>	<a href="#">ScoreType</a>
<b>Description:</b>	The similarity score assigned by the matching algorithm.

### 370 3.2.38 GenericRequestParameters

Field	Type	#	?	Meaning
GenericRequestParameters			Y	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested.

371 NOTE: See section 5.4 for alternatives for identifying the  
372 requested BIAS operation in a BIAS SOAP message.

### 373 3.2.39 IdentifySubjectResultType

<b>Description:</b>	A base type for all types that could be returned from the IdentifySubject operation
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### 374 3.2.40 InformationType

Field	Type	#	?	Meaning
InformationType			Y	Allows for an unlimited number of data element types, and it does not specify nor require any particular data element.
↑ unspecified	any	0..*	N	

### 375 3.2.41 ListFilterType

Field	Type	#	?	Meaning
ListFilterType			Y	Provides a method to filter the amount of information returned in a search of biometric data.
↑ BiometricTypeFilters		1	Y	
↑ BiometricTypeFilter	<code>oasis_cbeff:MultipleTypesType</code>	1..*	Y	Limits the returned information to a specific type of biometric, as defined by CBEFF.
↑ IncludeBiometricSubType	boolean	1	Y	A Boolean flag indicating if biometric subtype information should be returned.

376 **3.2.42 MatchType**

<b>Type:</b>	boolean
<b>Description:</b>	The result of a fusion method.

377 **3.2.43 OptionType**

Field	Type	#	?	Meaning
OptionType			Y	BIAS aggregate operations support the ability to include various processing options which direct and possibly control the business logic for that operation. Together with the ProcessingOptionsType, The OptionType provides a method to represent those options. Processing options SHOULD be defined by the implementing system.
↑ Key	string	1	Y	The identifier of an option supported by the implementing system.
↑ Value	string	0..1	N	The value for an option supported by the implementing system.

378 **3.2.44 ProcessingOptionsType**

Field	Type	#	?	Meaning
ProcessingOptionsType			Y	BIAS aggregate operations support the ability to include various processing options which direct and possibly control the business logic for that operation. The ProcessingOptionsType provides a method to represent those options. Processing options SHOULD be defined by the implementing system.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.

379 **3.2.45 ProductID**

<b>Type:</b>	string
<b>Description:</b>	The vendor's ID for a particular product.

380 **3.2.46 QualityData**

Field	Type	#	?	Meaning
QualityData			Y	Contains information about a biometric sample's quality and the algorithm used to compute the quality.
↑ QualityScore	oasis_cbeff:QualityType	0..1	N	The quality of a biometric sample.
↑ AlgorithmVendor	<a href="#">VendorIdentifier</a>	1	Y	The vendor of the quality algorithm used to determine the quality score.

Field	Type	#	?	Meaning
AlgorithmVendorProductID	<a href="#">ProductID</a>	1	Y	The vendor's ID for the algorithm used to determine the quality.
AlgorithmVersion	<a href="#">VersionType</a>	0..1	N	The version of the algorithm used to determine the quality.

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### 382 3.2.47 ResponseStatus

Field	Type	#	?	Meaning
ResponseStatus			Y	
Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
Message	string	0..1	N	A short message corresponding to the return code.

### 383 3.2.48 ReturnCode

Type:	unsignedLong
Description:	Return value specifying success or other condition.

### 384 ReturnCode Enumeration Values

Value	Description
0	Success

### 385 3.2.49 ScoreType

Field	Type	#	?	Meaning
ScoreType			Y	
Value	float	1	Y	Defines a match result or quality score.
BiometricType	oasis_cbeff:MultipleTypesType	0..1	N	The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.
BiometricSubType	oasis_cbeff:SubTypesType	0..1	N	More specifically defines the type of biometric data stored in the biometric record.

386 NOTE: Matching scores MAY be in a standardized or proprietary form in terms of value range and  
387 interpretation. Quality scores, however, follow the definition found in Annex

### 388 3.2.50 TokenResultType

Field	Type	#	?	Meaning
TokenResultType			Y	Defines a token that is returned for asynchronous processing.

Field	Type	#	?	Meaning
↑ TokenType	<a href="#">TokenType</a>	1	Y	Defines a token that is returned for asynchronous processing.

### 3.2.51 TokenType

Field	Type	#	?	Meaning
TokenType			Y	Defines a token that is returned for asynchronous processing.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
↑ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

NOTE: Date/time format is defined in ISO/IEC 30108 and is consistent with the date format specified in Annex B and ISO 8601[[DATE-TIME](#)]. See also Annex A for schema definition.

### 3.2.52 URI\_BIR

Field	Type	#	?	Meaning
URI_BIR	BaseBIRType		Y	Defines a BIR type of Binary
↑ URI	anyURI	1	Y	The URI of the BIR

### 3.2.53 VendorIdentifier

<b>Type:</b>	string
<b>Description:</b>	Identifies a vendor.

NOTE: Vendor identifiers are registered with IBIA as the CBEFF registration authority (see ISO/IEC 19785-2). Registered biometric organizations are listed at:  
[http://www.ibia.org/cbeff/\\_biometric\\_org.php](http://www.ibia.org/cbeff/_biometric_org.php).

### 3.2.54 Version

Field	Type	#	?	Meaning
Version			Y	For a description or definition of each data element, see the referenced CBEFF standards in the <a href="#">CBEFF_BIR_TYPE</a> schema.
↑ major	nonNegativeInteger	1	Y	
↑ minor	nonNegativeInteger	1	Y	

### 3.2.55 VersionType

<b>Type:</b>	string
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<b>Description:</b>	The version of a component.
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401 **3.2.56 XML\_BIR**

Field	Type	#	?	Meaning
XML_BIR	BaseBIRType		Y	Defines a BIR type of Binary
↑ XML	Oasis_cbeff:BIRType	1	Y	BIR information in XML format

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## 4 BIAS Messages

This section describes the BIAS messages implementing BIAS operations as defined in ISO/IEC 30108-1:2015. The operations are listed alphabetically, with each operation containing a request and a response message. The tables follow the conventions described in section 3.1.

### 4.1 Primitive Operations

#### 4.1.1 AddSubjectToGallery

[AddSubjectToGalleryRequest](#)

[AddSubjectToGalleryResponse](#)

The AddSubjectToGallery operation registers a subject to a given gallery or population group. As an OPTIONAL parameter, the value of the claim to identity by which the subject is known to the gallery MAY be specified. This claim to identity MUST be unique across the gallery. If no claim to identity is specified, the subject ID (assigned with the [CreateSubject](#) operation) will be used as the claim to identity. In the encounter-centric model, the encounter ID associated with the subject's biometrics that will be added to the gallery MUST be specified. Additionally, the service provider implementation is responsible for the creation and management of galleries. For this purpose, services are not exposed to the requester.

#### Request Message

Field	Type	#	?	Meaning
AddSubjectToGallery			Y	Register a subject to a given gallery or population group.
⬇ AddSubjectToGalleryRequest		1	Y	
⬇ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⬇ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⬇ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⬇ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "AddSubjectToGallery".



Field	Type	#	?	Meaning
↑ GalleryID	<a href="#">BIASIDType</a>	1	Y	The identifier of the gallery or population group to which the subject will be added.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	The identity to add to the gallery.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↑ IdentityClaim	<a href="#">BIASIDType</a>	0..1	N	An identifier by which a subject is known to a particular gallery or population group. (This could be a username or account number, for example.)
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.  Required for encounter-centric models.

## 422 Response Message

Field	Type	#	?	Meaning
AddSubjectToGalleryResponse			Y	The response to an AddSubjectToGallery operation.
↑ AddSubjectToGalleryResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 423 4.1.2 CheckQuality

424 [CheckQualityRequest](#)

425 [CheckQualityResponse](#)

426 The CheckQuality operation returns a quality score for a given biometric or a specified subject. Either a  
 427 biometric sample or a subject ID MUST be provided. The biometric input is provided in a CBEFF basic  
 428 structure or CBEFF record, which in this specification is called a CBEFF-BIR. The algorithm vendor and  
 429 algorithm vendor product ID MAY be optionally provided in order to request a particular algorithm's use in  
 430 calculating the biometric quality. If an algorithm vendor is provided, then the algorithm vendor product ID  
 431 is REQUIRED. If no algorithm vendor is provided, the implementing system will provide the algorithm  
 432 vendor and algorithm vendor product ID that were used to calculate the biometric quality as output  
 433 parameters.

434 Algorithm Vendors are registered with the ISO Biometric Registration Authority. They are assigned unique  
 435 identifiers as outlined in ISO/IEC 19785-2. Algorithm Product IDs are assigned by the registered algorithm  
 436 vendor.

## 437 Request Message

Field	Type	#	?	Meaning
CheckQuality			Y	Calculate a quality score for a given biometric.
↳ CheckQualityRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "CheckQuality".
↳ BiometricData	<a href="#">BIASBiometricDataType</a>	0..1	C	Data structure containing a single biometric sample for which a quality score is to be determined; required if no Subject ID is provided.

Field	Type	#	?	Meaning
↑ BIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	The biometric sample.
↑ Identity	<a href="#">BIASIdentity</a>	0..1	C	Required if no BIR is provided.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	Identifies the subject; required if no BIR is provided.
↑ Qualityinfo	<a href="#">QualityData</a>	0..1	N	Specifies a particular algorithm vendor and vender product ID.
↑ AlgorithmVendor	<a href="#">VendorIdentifier</a>	1	Y	The vendor of the quality algorithm used to determine the quality score.
↑ AlgorithmVendorProductID	<a href="#">ProductID</a>	1	C	The vendor assigned ID for the algorithm used to determine the quality; required as input if algorithm vendor is provided

#### 438 Response Message

Field	Type	#	?	Meaning
CheckQualityResponse			Y	The response to a CheckQuality operation.
↑ CheckQualityResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

Field	Type	#	?	Meaning
↑ QualityInfo	<a href="#">QualityData</a>	1	Y	Contains the quality information for the submitted biometric sample.
↑ QualityScore	oasis_cbeff:QualityType	0..1	N	The quality of a biometric sample.
↑ AlgorithmVendor	<a href="#">VendorIdentifier</a>	1	Y	The vendor of the quality algorithm used to determine the quality score.
↑ AlgorithmVendorProductID	<a href="#">ProductID</a>	1	Y	The vendor's ID for the algorithm used to determine the quality.
↑ AlgorithmVersion	<a href="#">VersionType</a>	1	Y	The version of the algorithm used to determine the quality.

### 4.1.3 ClassifyBiometricData

[ClassifyBiometricDataRequest](#)

[ClassifyBiometricDataResponse](#)

The ClassifyBiometricData operation attempts to classify a biometric sample. For example, a fingerprint biometric sample may be classified as a whorl, loop, or arch (or other classification classes and sub-classes). If no classification algorithm is input, then the BIAS service provider will make the selection.

To obtain the types of classification algorithms and classes, see the [QueryCapabilities](#) operation.

### Request Message

Field	Type	#	?	Meaning
ClassifyBiometricData			Y	Classifies a biometric sample.
↑ ClassifyBiometricDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "ClassifyBiometricData".

Field	Type	#	?	Meaning
↑ BiometricData	<a href="#">BIASBiometricDataType</a>	1	Y	Data structure containing a single biometric sample for which the classification is to be determined.
↑ BIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	The biometric sample.
↑ ClassificationData		0..1	N	Contains the algorithm to be used to determine the classification.
↑ ClassificationAlgorithmType	<a href="#">ClassificationAlgorithmType</a>	1	Y	Identifies the type of classification algorithm to be used to perform the classification.

#### 447 Response Message

Field	Type	#	?	Meaning
ClassifyBiometricDataResponse			Y	The response to a ClassifyBiometricData operation, containing the classification of a biometric sample.
↑ ClassifyBiometricDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ClassificationData	<a href="#">ClassificationData</a>	1	Y	Information on the results and type of classification performed.
↑ Classification	<a href="#">Classification</a>	1	Y	The result of the classification.
↑ ClassificationAlgorithmType	<a href="#">ClassificationAlgorithmType</a>	1	Y	Identifies the type of classification algorithm that was used to perform the classification.

#### 4.1.4 CreateEncounter

[CreateEncounterRequest](#)

[CreateEncounterResponse](#)

The CreateEncounter operation creates a new encounter record for a subject and associates an encounter ID to that record. If an encounter ID is not supplied by the requester, the service generates an encounter ID that uniquely identifies the encounter within the subject record. The CreateEncounter operation is performed prior to a [SetBiographicData](#), [SetBiometricData](#), or [SetDocumentData](#) operation.

In encounter mode, for match operations, the BIAS service provider will create the encounter and will set the encounter type to "recognition". Normally the BIAS implementation will assign the encounter ID. However, if a requester assigns the encounter ID, it should be used unless it duplicates an existing encounter ID. If that happens an error should be returned.

#### Request Message

Field	Type	#	?	Meaning
CreateEncounter			Y	Create a new encounter record for the specified subject and associate an encounter ID to that record.
⌞ CreateEncounterRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "CreateEncounter".
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	
⌞ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
⌞ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.  Required for encounter-centric models.

Field	Type	#	?	Meaning
↑ EncounterType	<a href="#">EncounterCategoryType</a>	1	Y	Identifies the type of encounter during which data was collected from the subject, as determined by the requester.

## 460 Response Message

Field	Type	#	?	Meaning
CreateEncounterResponse			Y	The response to a CreateEncounter operation, containing the new encounterID associated with the specified subject.
↑ CreateEncounterResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of an encounter associated with the subject. Required for encounter-centric models.

## 461 4.1.5 CreateSubject





462 [CreateSubjectRequest](#)

463 [CreateSubjectResponse](#)







464 The CreateSubject operation creates a new subject record and associates a subject ID to that record. As  
 465 an optional parameter, the subject ID MAY be specified by the caller. If no subject ID is specified, the  
 466 CreateSubject operation will generate one. UUIDs should be used for Subject IDs when universal  
 467 uniqueness is required.

## 468 Request Message

Field	Type	#	?	Meaning
CreateSubject			Y	
↑ CreateSubjectRequest		1	Y	

Field	Type	#	?	Meaning
 GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
 Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
 ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
 BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "CreateSubject".

## 469 Response Message

Field	Type	#	?	Meaning
CreateSubjectResponse			Y	The response to a CreateSubject operation, containing the subject ID of the new subject record.
 CreateSubjectResponsePackage		1	Y	
 ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
 Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
 Message	string	0..1	N	A short message corresponding to the return code.
 Identity	<a href="#">BIASIdentity</a>	1	Y	
 SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.

## 470 4.1.6 DeleteBiographicData

471 [DeleteBiographicDataRequest](#)

472 [DeleteBiographicDataResponse](#)

473 The DeleteBiographicData operation erases all of the biographic data associated with a given subject  
474 record. In the encounter-centric model the operation erases all of the biographic data associated with a  
475 given encounter, and therefore the encounter ID MUST be specified. If no encounter ID is specified, or it  
476 is null, biographic data will be removed from all encounters. If a gallery is specified, biographic data will  
477 be deleted from that gallery only.

478 When deleting data, BIAS implementations MAY completely erase the information in order to prevent the  
479 ability to reconstruct a record in whole or in part, or they MAY track and record the deleted information for  
480 auditing and/or quality control purposes.



481 **Request Message**

Field	Type	#	?	Meaning
DeleteBiographicData			Y	Erase all of the biographic data associated with a given subject record or, in the encounter-centric model, with a given encounter.
⌞ DeleteBiographicDataRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteBiographicData"
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	
⌞ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
⌞ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
⌞ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group from which the biographic information will be deleted.

482 **Response Message**

Field	Type	#	?	Meaning
DeleteBiographicDataResponse			Y	The response to a DeleteBiographicData operation.
⌞ DeleteBiographicDataResponsePackage		1	Y	

Field	Type	#	?	Meaning
↳ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↳ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↳ Message	string	0..1	N	A short message corresponding to the return code.

## 4.1.7 DeleteBiometricData

### [DeleteBiometricDataRequest](#)

### [DeleteBiometricDataResponse](#)

The DeleteBiometricData operation erases all of the biometric data associated with a given subject record. In the encounter-centric model the operation erases all of the biometric data associated with a given encounter, and therefore the encounter ID MUST be specified. If no encounter ID is specified, or it is null, biometric data will be removed from all encounters. If a gallery is specified, biometric data will be deleted from that gallery only. If a biometric type(s) is specified, then only biometric data of that type will be deleted.

When deleting data, BIAS implementations MAY completely erase the information in order to prevent the ability to reconstruct a record in whole or in part, or they MAY track and record the deleted information for auditing and/or quality control purposes.

## Request Message

Field	Type	#	?	Meaning
DeleteBiometricData			Y	Erase all of the biometric data associated with a given subject record or, in the encounter-centric model, with a given encounter.
↳ DeleteBiometricDataRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteBiometricData".

Field	Type	#	?	Meaning
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
↑ BiometricType	oasis_cbeff:MultipleTypesType	0..1	N	The type of biological or behavioral data to delete, as defined by CBEFF.
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group from which the biometric information will be deleted.

## 496 Response Message

Field	Type	#	?	Meaning
DeleteBiometricDataResponse			Y	The response to a DeleteBiometricData operation.
↑ DeleteBiometricDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 497 4.1.8 DeleteDocumentData

### 498 [DeleteDocumentDataRequest](#)

### 499 [DeleteDocumentDataResponse](#)

500 The DeleteDocumentData operation erases all of the document data of the specified category(ies)  
501 associated with a given subject record. In the encounter-centric model the service erases all of the  
502 document data associated with a given encounter, and therefore the encounter ID MUST be specified. If  
503 no encounter ID is specified, or it is null, document data will be removed from all encounters. If no  
504 categories are specified, then all categories (for the specified encounters) will be deleted.

505 When deleting data, BIAS implementations MAY completely erase the information in order to prevent the  
506 ability to reconstruct a record in whole or in part, or they may track and record the deleted information for  
507 auditing and/or quality control purposes.

508 **Request Message**

Field	Type	#	?	Meaning
DeleteDocumentData			Y	Erase all of the document data associated with a given subject record or, in the encounter-centric model, with a given encounter.
⌞ DeleteDocumentDataRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteDocumentData"
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	
⌞ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
⌞ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
⌞ DocumentData	<a href="#">DocumentDataType</a>	0..1	N	Defines a set of document data elements providing information about the presented identity document.
⌞ DocumentCategory	string	1	Y	The category(ies) of the identity documents to be deleted.

509 **Response Message**

Field	Type	#	?	Meaning
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Field	Type	#	?	Meaning
DeleteDocumentDataResponse			Y	The response to a DeleteDocumentData operation.
└ DeleteDocumentDataResponsePackage		1	Y	
└ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
└ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
└ Message	string	0..1	N	A short message corresponding to the return code.

#### 4.1.9 DeleteEncounter

[DeleteEncounterRequest](#)

[DeleteEncounterResponse](#)

The DeleteEncounter operation deletes an existing encounter record from the system. When deleting an encounter, BIAS implementations MAY completely erase the information in order to prevent the ability to reconstruct a record in whole or in part, or they MAY track and record the deleted information for auditing and/or quality control purposes.

#### Request Message

Field	Type	#	?	Meaning
DeleteEncounter			Y	Delete an existing encounter record and, any associated encounter information.
└ DeleteEncounterRequest		1	Y	
└ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
└ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
└ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
└ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteEncounter".
└ Identity	<a href="#">BIASIdentity</a>	1	Y	

Field	Type	#	?	Meaning
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of an encounter associated with the subject.

## 518 Response Message

Field	Type	#	?	Meaning
DeleteEncounterResponse			Y	The response to a DeleteEncounter operation.
↑ DeleteEncounterResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 519 4.1.10 DeleteSubject

### 520 [DeleteSubjectRequest](#)

### 521 [DeleteSubjectResponse](#)

522 The DeleteSubject operation deletes an existing subject record and, in an encounter-centric model, any  
523 associated encounter information from the system. This operation also removes the subject from any  
524 registered galleries.

525 When deleting a subject, BIAS implementations MAY completely erase the subject information in order to  
526 prevent the ability to reconstruct a record or records in whole or in part, or they MAY track and record the  
527 deleted information for auditing and/or quality control purposes.

## 528 Request Message

Field	Type	#	?	Meaning
DeleteSubject			Y	Delete an existing subject record and, in an encounter-centric model, any associated encounter information.
↑ DeleteSubjectRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.

Field	Type	#	?	Meaning
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteSubject".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	The identity of the subject to delete.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.

## 529 Response Message

Field	Type	#	?	Meaning
DeleteSubjectResponse			Y	The response to a DeleteSubject operation.
↑ DeleteSubjectResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 530 4.1.11 DeleteSubjectFromGallery

531 [DeleteSubjectFromGalleryRequest](#)

532 [DeleteSubjectFromGalleryResponse](#)

533 The DeleteSubjectFromGallery operation removes the registration of a subject from a gallery or  
534 population group. The subject is identified by either the subject ID or the claim to identity that was  
535 specified in the [AddSubjectToGallery](#) operation.

## 536 Request Message

Field	Type	#	?	Meaning
DeleteSubjectFromGallery			Y	Remove the registration of a subject from a gallery or population group.

Field	Type	#	?	Meaning
⬆ DeleteSubjectFromGalleryRequest		1	Y	
⬆ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⬆ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⬆ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⬆ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "DeleteSubjectFromGallery".
⬆ GalleryID	<a href="#">BIASIDType</a>	1	Y	The identifier of the gallery or population group from which the subject will be deleted.
⬆ Identity	<a href="#">BIASIdentity</a>	1	Y	The identity to remove from the gallery.
⬆ SubjectID	<a href="#">BIASIDType</a>	0..1	C	A system unique identifier for a subject. Required if an Identity Claim is not provided.
⬆ IdentityClaim	<a href="#">BIASIDType</a>	0..1	C	An identifier by which a subject is known to a particular gallery or population group. Required if a Subject ID is not provided.

## 537 Response Message

Field	Type	#	?	Meaning
DeleteSubjectFromGalleryResponse			Y	The response to a DeleteSubjectFromGallery operation.
⬆ DeleteSubjectFromGalleryResponsePackage				
⬆ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
⬆ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.



Field	Type	#	?	Meaning
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 4.1.12 GetIdentifySubjectResults

[GetIdentifySubjectResultsRequest](#)

[GetIdentifySubjectResultsResponse](#)

The GetIdentifySubjectResults operation retrieves the identification results for the specified token. This operation is used in conjunction with the [IdentifySubject](#) operation. If the IdentifySubject operation is implemented as an asynchronous service, the implementing system returns a token and the GetIdentifySubjectResults operation is used to poll for the results of the original IdentifySubject request.

### Request Message

Field	Type	#	?	Meaning
GetIdentifySubjectResults			Y	Retrieve the identification results for a specified token, which was returned by the <a href="#">IdentifySubject</a> operation.
↑ GetIdentifySubjectResultsRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "GetIdentifySubjectResults".
↑ Token	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of an IdentifySubject request.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.

Field	Type	#	?	Meaning
⌞ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 546 Response Message

Field	Type	#	?	Meaning
GetIdentifySubjectResultsResponse			Y	The response to a GetIdentifySubjectResults operation, which includes a candidate list.
⌞ GetIdentifySubjectResultsResponsePackage		1	Y	
⌞ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
⌞ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
⌞ Message	string	0..1	N	A short message corresponding to the return code.
⌞ CandidateList	<a href="#">CandidateListType</a>	1	Y	A rank-ordered list of candidates that have a likelihood of matching the input biometric sample.
⌞ Candidate	<a href="#">CandidateType</a>	0..*	N	A single candidate.
⌞ Score	<a href="#">ScoreType</a>	0..1	N	The match score.
BiographicData ⌞	<a href="#">BiographicDataType</a>	0..1	N	Biographic data associated with the candidate match.
⌞ BIRList	<a href="#">CBEFF_BIR_ListType</a>	1	Y	Biometric data associated with the candidate match.
BIR ⌞	<a href="#">CBEFF_BIR_Type</a>	0..*	N	CBEFF structure containing information about a biometric sample.

## 547 4.1.13 IdentifySubject

548 [IdentifySubjectRequest](#)

549 [IdentifySubjectResponse](#)

550 The IdentifySubject operation performs an identification search against a given gallery for a given  
551 biometric, returning a rank-ordered candidate list of a given maximum size. Note that multiple

552 scores/candidates is already incorporated as a score comes with a CandidateType which is a member of  
553 CandidateList.

554 If the IdentifySubject operation is implemented as a synchronous service, the implementing system  
555 immediately processes the request and returns the results in the candidate list. If the IdentifySubject  
556 operation is implemented as an asynchronous service, the implementing system returns a token, which is  
557 an indication that the request is being handled asynchronously. In this case, the  
558 [GetIdentifySubjectResults](#) operation is used to poll for the results of the IdentifySubject request.

559 Gallery ID must not be used in conjunction with Gallery parameter. Gallery must not be used in  
560 conjunction with Gallery ID parameter. However, Gallery ID or Gallery MUST be present.

## 561 Request Message

Field	Type	#	?	Meaning
IdentifySubject			Y	Perform an identification search against a given gallery for a given biometric.
↑ IdentifySubjectRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "IdentifySubject".
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the gallery or population group which will be searched. Must not be used in conjunction with Gallery parameter.
↑ Gallery	<a href="#">CandidateListType</a>	0..1	C	A list of BIRs that must be used instead of a stored gallery. Must not be used in conjunction with GalleryID parameter.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Contains the BIR, a data structure containing the biometric sample for the search.

Field	Type	#	?	Meaning
↑ BiometricData	<a href="#">BIASBiometricDataType</a>	1	Y	An Identity's biometric data.
↑ BIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	Contains biometric information in either a non-XML or an XML representation.
↑ MaxListSize	positiveInteger	1	Y	The maximum size of the candidate list that should be returned.

## 562 Response Message

Field	Type	#	?	Meaning
IdentifySubjectResponse			Y	The response to an IdentifySubject operation, returning a rank-ordered candidate list.
↑ IdentifySubjectResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ CandidateList	<a href="#">CandidateListResultType</a> (see <a href="#">IdentifySubjectResultType</a> )	0..1	C	A rank-ordered list of candidates that have a likelihood of matching the input biometric sample (i.e., exceed the system threshold).  Rank ordering is from highest to lowest match score.  Returned with successful synchronous request processing.
↑ Candidate	<a href="#">CandidateType</a>	0..*	N	A single candidate.
↑ Score	<a href="#">ScoreType</a>	0..1	N	The match score.
BiographicData ↑	<a href="#">BiographicDataType</a>	0..1	N	Biographic data associated with the candidate match.
↑ BIRList	<a href="#">CBEFF_BIR_ListType</a>	1	Y	Biometric data associated with the candidate match.

Field	Type	#	?	Meaning
BIR <span style="float: right;">↑</span>	<a href="#">CBEFF_BIR_Type</a>	0..*	N	CBEFF structure containing information about a biometric sample.
<span style="float: right;">↑</span> Token	<a href="#">TokenResultType</a> (see <a href="#">IdentifySubjectResultType</a> )	0..1	C	A token used to retrieve the results of the IdentifySubject operation. Returned with asynchronous request processing.
<span style="float: right;">↑</span> TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
<span style="float: right;">↑</span> Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

#### NOTES:

- (1) In the event that the number of candidates exceeding the threshold exceeds the MaxListSize, the system will determine which candidate is included in the last position of the rank ordered candidate list (i.e., in the event of a tie).
- (2) Requesters MAY NOT change the system thresholds.

### 4.1.14 ListBiographicData

[ListBiographicDataRequest](#)

[ListBiographicDataResponse](#)

The ListBiographicData operation lists the biographic data elements stored for a subject using the Biographic Data Elements output parameter. Note that no actual biographic data is returned by this operation (see the [RetrieveBiographicData](#) operation to obtain the biographic data). In the encounter-centric model, an encounter ID MAY be specified to indicate that only the biographic data elements stored for that encounter should be returned. If an encounter ID is not specified and encounter data exists for the subject, the operation returns the list of encounter IDs which contain biographic data using the Encounter List output parameter, and the Biographic Data Element List output parameter is empty.

### Request Message

Field	Type	#	?	Meaning
ListBiographicData			Y	Lists the biographic data elements stored for a subject.
<span style="float: right;">↑</span> ListBiographicDataRequest		1	Y	

Field	Type	#	?	Meaning
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "ListBiographicData".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.
↑ EncounterType	<a href="#">EncounterCategoryType</a>	0..1	C	Identifies the category of encounter. If an encounter ID is not specified and encounter data exists for the subject, the operation returns the list of encounter IDs of a specific type which contain biographic data using the Encounter List output parameter, and the Biographic Data Elements output parameter is empty.  Should not be used in conjunction with EncounterID.

## 579 Response Message

Field	Type	#	?	Meaning
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Field	Type	#	?	Meaning
ListBiographicDataResponse			Y	The response to a ListBiographicData request, containing a list of biographic data elements stored for a subject. In the encounter-centric model, the biographic data elements for a specific encounter are returned. If an encounter ID is not specified and encounter data exists for the subject, the list of encounter IDs which contain biographic data is returned.
↳ ListBiographicDataResponsePackage		1	Y	
↳ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↳ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↳ Message	string	0..1	N	A short message corresponding to the return code.
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	Contains a list of biographic data elements associated with a subject or encounter; non-empty if the service was successful, biographic data exists, and either (a) the person-centric model is being used or (b) the encounter-centric model is being used and an encounter identifier was specified.
↳ BiographicData	<a href="#">BiographicDataType</a>	0..1	C	An Identity's biographic data elements that are stored in the implementing system.
↳ BiographicDataItemList	<a href="#">BiographicDataItemLi stType</a>	0..1	N	A list of biographic data elements.
↳ BiographicDataItem	<a href="#">BiographicDataItemTy pe</a>	1..*	Y	A single biographic data element.

Field	Type	#	?	Meaning
↑ Name	string	1	Y	The name of the biographic data item.
↑ Type	string	1	Y	The data type for the biographic data item.
↑ Value	string	0..1	N	The value assigned to the biographic data item.
↑ EncounterList	<a href="#">EncounterListType</a>	0..1	C	A list of encounter ID's associated with a subject and which contain biographic data; non-empty if the service was successful, biographic data exists, the encounter-centric model is being used, and an encounter identifier was not specified.
↑ EncounterID	<a href="#">BIASIDType</a>	0..*	N	The identifier of an encounter.

#### 4.1.15 ListBiometricData

[ListBiometricDataRequest](#)

[ListBiometricDataResponse](#)

The ListBiometricData operation lists the biometric data elements stored for a subject using the Biometric Data List output parameter. Note that no actual biometric data is returned by this operation (see the [RetrieveBiometricData](#) operation to obtain the biometric data). In the encounter-centric model, an encounter ID MAY be specified to indicate that only the biometric data elements stored for that encounter should be returned. If an encounter ID is not specified and encounter data exists for the subject, the operation returns the list of encounter IDs which contain biometric data using the Encounter List output parameter, and the Biometric Data List output parameter is empty.

An optional parameter MAY be used to indicate a filter on the list of returned data. Such a filter may indicate that only biometric types should be listed (e.g., face, finger, iris, etc.) or that only biometric subtypes for a particular biometric type should be listed (e.g., all fingerprints: left slap, right index, etc.). If a filter is not specified, all biometric type and biometric subtype information must both be listed (e.g., left index finger, right iris, face frontal, etc.).

#### Request Message

Field	Type	#	?	Meaning
ListBiometricData			Y	Lists the biometric data elements stored for a subject.
↑ ListBiometricDataRequest		1	Y	









Field	Type	#	?	Meaning
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "ListBiometricData".
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter.
↳ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↳ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.

Field	Type	#	?	Meaning
↳ EncounterType	<a href="#">EncounterCategoryType</a>	0..1	C	Identifies the category of encounter. If an encounter ID is not specified and encounter data exists for the subject, the operation may return the list of encounter IDs of a specific type which contain biometric data using the Encounter List output parameter, and the Biometric Data List output parameter is empty.  Should not be used in conjunction with EncounterID.
↳ ListFilterType	<a href="#">ListFilterType</a>	0..1	N	Indicates what biometric information should be returned.
↳ BiometricTypeFilter	oasis_cbeff:MultipleTypesType	1..*	Y	Limits the returned information to a specific type of biometric, as defined by CBEFF.
↳ IncludeBiometricSubType	boolean	1	Y	A Boolean flag indicating if biometric subtype information should be returned.

## 596 Response Message

Field	Type	#	?	Meaning
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Field	Type	#	?	Meaning
ListBiometricDataResponse			Y	The response to a ListBiometricData operation, containing a list of biometric data elements stored for a subject. In the encounter-centric model, the biometric data elements for a specific encounter are returned. If an encounter ID is not specified and encounter data exists for the subject, the list of encounter IDs which contain biometric data is returned.
↳ ListBiometricDataResponsePackage		1	Y	
↳ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↳ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↳ Message	string	0..1	N	A short message corresponding to the return code.
↳ Identity	<a href="#">BIASIdentity</a>	0..1	N	Includes a list of biometric data elements associated with a subject or encounter or a list of encounter ID's associated with a subject and which contain biometric data.
↳ BiometricData	<a href="#">BIASBiometricDataType</a>	0..1	C	An Identity's biometric data.
BiometricDataList ↳	<a href="#">BiometricDataListType</a>	0..1	N	A list of biometric data elements.

Field	Type	#	?	Meaning
BiometricDataRecord 	<a href="#">BiometricDataType</a>	1..*	Y	Data structure containing information about a biometric record.
 BiometricType	oasis_cbeff:MultipleTypesType	1	Y	The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.
 BiometricTypeCount	positiveInteger	0..1	N	The number of biometric records having the biometric type recorded in the biometric type field.
 BiometricSubType	oasis_cbeff:SubtypeType	0..1	N	More specifically defines the type of biometric data stored in the biometric record, as defined by CBEFF.
 BDBFormatOwner	positiveInteger	1	Y	Identifies the standards body, working group, industry consortium, or other CBEFF biometric organization that has defined the format for the biometric data.
 BDBFormatType	positiveInteger	1	Y	Identifies the specific biometric data format specified by the CBEFF biometric organization recorded in the BDB Format Owner field.

Field	Type	#	?	Meaning
↑ EncounterList	<a href="#">EncounterListType</a>	0..1	C	A list of encounter ID's associated with a subject and which contain biometric data; non-empty if the service was successful, biometric data exists, the encounter-centric model is being used, and an encounter identifier was not specified.
↑ EncounterID	<a href="#">BIASIDType</a>	1..*	Y	The identifier of an encounter.

#### 4.1.16 ListDocumentData

[ListDocumentDataRequest](#)

[ListDocumentDataResponse](#)

The ListDocumentData operation lists the document categories stored for a subject using the Document Data List output parameter. Note that no other document data is returned by this operation (see the [RetrieveDocumentData](#) operation to obtain document data by category.) In the encounter-centric model, an encounter ID may be specified to indicate that only the document data elements stored for that encounter should be returned. If an encounter ID is not specified and encounter data exists for the subject, the operation must return the list of encounter IDs which contain document data using the Encounter List Output parameter, and the Document Data List output parameter must be empty.

#### Request Message

Field	Type	#	?	Meaning
ListDocumentData			Y	
↑ ListDocumentDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.

Field	Type	#	?	Meaning
BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "ListDocumentData".
Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter.
SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.
EncounterType	<a href="#">EncounterCategoryType</a>	0..1	C	Identifies the category of encounter. If an encounter ID is not specified and encounter data exists for the subject, the operation must return the list of encounter IDs which contain document data using the Encounter List Output parameter, and the Document Data List output parameter must be empty.  Should not be used in conjunction with EncounterID.

## 608 Response Message

Field	Type	#	?	Meaning
ListDocumentDataResponse			Y	The response to a ListDocumentData operation.
ListDocumentDataResponsePackage		1	Y	
ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.

Field	Type	#	?	Meaning
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ DocumentDataList	<a href="#">DocumentDataListType</a>	0..1	C	A list of document categories associated with a subject or encounter; non-empty if the service was successful, document data exists, and either the person-centric model is being used or the encounter-centric model is being used and an encounter identifier was specified.
↑ DocumentData	<a href="#">DocumentDataType</a>	1..*	Y	Defines a set of document data elements providing information about the presented identity document
DocumentCategory ↑	string	1	Y	The type of identity document presented (e.g. passport).
↑ Identity	<a href="#">BIASIdentity</a>	0..1	C	
↑ EncounterList	<a href="#">EncounterListType</a>	1	Y	A list of encounter IDs associated with a subject and which contain document data; non-empty if the service was successful, document data exists, the encounter-centric model is being used, and an encounter identifier was not specified.
↑ EncounterID	<a href="#">BIASIDType</a>	1..*	Y	The identifier of an encounter.

#### 4.1.17 PerformFusion

[PerformFusionRequest](#)

[PerformFusionResponse](#)

The PerformFusion operation accepts either match score or match decision information and creates a fused match result. The [FusionInformationListType](#), through the [FusionInformationType](#), provides specific elements for match score input and match decision input for a single identity, while the [FusionIdentityListType](#) provides the ability to submit multiple identities to the Perform Fusion operation. The fusion method and processes are left to the implementing system.

617 **Request Message**

Field	Type	#	?	Meaning
PerformFusion			Y	Accepts either match score or match decision information and creates a fused match result.
└ PerformFusionRequest		1	Y	
└ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
└ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
└ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
└ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "PerformFusion".
FusionInput	<a href="#">FusionIdentityListType</a>	1	Y	
└ FusionIdentity	<a href="#">FusionInformationListType</a>	1	Y	Score or decision input information to the fusion method for each identity.
FusionElement └	<a href="#">FusionInformationType</a>	2..*	Y	A set of fusion information.
BiometricType └	oasis_cbeff:MultipleTypesType	1	Y	The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.
BiometricSubType └	oasis_cbeff:SubtypeType	0..1	N	More specifically defines the type of biometric data stored in the biometric record.



Field	Type	#	?	Meaning
AlgorithmOwner <sup>⌞</sup>	string	1	Y	The owner or vendor of the algorithm used to determine the score or decision.
<sup>⌞</sup> AlgorithmType	string	1	Y	The Algorithm Owner's identifier for the specific algorithm product and version used to determine the score or decision.
<sup>⌞</sup> FusionResult	<a href="#">FusionResult</a>	0..1	C	Either <a href="#">FusionScore</a> or a <a href="#">FusionDecision</a> element MUST be used.

## 618 Response Message

Field	Type	#	?	Meaning
PerformFusionResponse			Y	The response to the PerformFusion operation.
<sup>⌞</sup> PerformFusionResponsePackage		1	Y	
<sup>⌞</sup> ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
<sup>⌞</sup> Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
<sup>⌞</sup> Message	string	0..1	N	A short message corresponding to the return code.
<sup>⌞</sup> Match	<a href="#">MatchType</a>	1	Y	Indicates the result of the fusion method.

## 619 4.1.18 QueryCapabilities

620 [QueryCapabilitiesRequest](#)

621 [QueryCapabilitiesResponse](#)

622 The QueryCapabilities operation returns a list of the capabilities, options, galleries, etc. that are supported  
623 by the BIAS implementation. Refer to Annex A in the ISO/IEC BIAS [\[ISO/IEC-BIAS\]](#) standard for  
624 conformance requirements regarding which capability names an implementation must use in the  
625 QueryCapabilities operation. If the implementing system does not support a capability item, the Capability  
626 Value can be set to null in the response.

627 Proprietary and additional information may be returned by returning capabilities that are not part of those  
628 capabilities enumerated in the [Capability Name](#) section 3.2.21. When returning capabilities not  
629 enumerated in section 3.2.21, the Capability Description should describe the capability. For each

630 capability enumerated in section 3.2.21, the Capability Name should be set to the name in the value  
 631 column.

## 632 Request Message

Field	Type	#	?	Meaning
QueryCapabilities			Y	Returns a list of the capabilities, options, galleries, etc. that are supported by the BIAS implementation.
↳ QueryCapabilitiesRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "QueryCapabilities".

## 633 Response Message

Field	Type	#	?	Meaning
QueryCapabilitiesResponse			Y	The response to a QueryCapabilities operation.
↳ QueryCapabilitiesResponsePackage		1	Y	
↳ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↳ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↳ Message	string	0..1	N	A short message corresponding to the return code.
↳ CapabilityList	<a href="#">CapabilityListType</a>	1	Y	A list of capabilities supported by the BIAS implementation.

Field	Type	#	?	Meaning
↑ Capability	<a href="#">CapabilityType</a>	0..*	N	A single capability.
↑ CapabilityName	<a href="#">CapabilityName</a>	1	Y	The name of the capability.
↑ CapabilityID	string	0..1	N	An identifier assigned to the capability by the implementing system.
↑ CapabilityDescription	string	0..1	N	A description of the capability.
↑ CapabilityValue	string	0..1	N	A value assigned to the capability.
↑ CapabilitySupportingValue	string	0..1	N	A secondary value supporting the capability.
↑ CapabilityAdditionalInfo	string	0..1	N	Contains additional information for the supported capability.

#### 4.1.19 RetrieveBiographicData

[RetrieveBiographicDataRequest](#)

[RetrieveBiographicDataResponse](#)

The RetrieveBiographicData operation retrieves the biographic data associated with a subject ID. In the encounter-centric model, the encounter ID MAY be specified and the operation will return the set of biographic data associated with that encounter (the list contains a single set). If the encounter ID is not specified in the encounter-centric model, the operation returns the list of biographic information associated with the most recent encounter. If no gallery ID is specified, a list of biographic information from all galleries will be returned.

#### Request Message

Field	Type	#	?	Meaning
RetrieveBiographicData			Y	Retrieves the biographic data associated with a subject ID.
↑ RetrieveBiographicDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.

Field	Type	#	?	Meaning
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "RetrieveBiographic Data".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.
↑ EncounterType	<a href="#">EncounterCategoryType</a>	0..1	N	Identifies the type of encounter during which data was collected from the subject, as determined by the requester.
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group from which the biographic information will be retrieved.

## 644 Response Message

Field	Type	#	?	Meaning
RetrieveBiographicDataResponse			Y	The response to a RetrieveBiographicData operation.
↑ RetrieveBiographicDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.

Field	Type	#	?	Meaning
⌞ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
⌞ Message	string	0..1	N	A short message corresponding to the return code.
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	Includes the set of biographic data associated with a subject.
⌞ BiographicDataList	<a href="#">BiographicDataListType</a>	1	Y	A list of biographic data associated with the subject or encounter.
⌞ BiographicData	<a href="#">BiographicDataType</a>	0..*	N	An Identity's biographic data. One of the following elements MUST be present
LastName ⌞	string	0..1	C	The last name of a subject.
FirstName ⌞	string	0..1	C	The first name of a subject.
BiographicDataItemList ⌞	<a href="#">BiographicDataItemListType</a>	0..1	C	A list of biographic data elements.
⌞ BiographicDataItem	<a href="#">BiographicDataItemType</a>	1..*	Y	A single biographic data element.
⌞ Name	string	1	Y	The name of the biographic data item.
⌞ Type	string	1	Y	The data type for the biographic data item.
⌞ Value	string	0..1	N	The value assigned to the biographic data item.
BiographicDataSet ⌞	<a href="#">BiographicDataSetType</a>	0..1	C	A set of biographic data information.

#### 645 **4.1.20 RetrieveBiometricData**

646 [RetrieveBiometricDataRequest](#)

647 [RetrieveBiometricDataResponse](#)

648 The RetrieveBiometricData operation retrieves the biometric data associated with a subject ID. In the  
649 encounter-centric model, the encounter ID MAY be specified and the operation will return the biometric  
650 data associated with that encounter. If the encounter ID is not specified in the encounter-centric model,  
651 the operation returns the biometric information associated with the most recent encounter. The operation  
652 provides an OPTIONAL input parameter to specify that only biometric data of a certain type should be  
653 retrieved.

## 654 Request Message

Field	Type	#	?	Meaning
RetrieveBiometricData			Y	Retrieves the biometric data associated with a subject ID.
⌞ RetrieveBiometricDataRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "RetrieveBiometricData".
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter.
⌞ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
⌞ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.
⌞ EncounterType	<a href="#">EncounterCategoryType</a>	0..1	N	Identifies the type of encounter during which data was collected from the subject, as determined by the requester.

Field	Type	#	?	Meaning
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group from which the biometric information will be retrieved.
↑ BiometricType	oasis_cbeff:MultipleTypesType	0..1	N	The type of biological or behavioral data to retrieve.

## 655 Response Message

Field	Type	#	?	Meaning
RetrieveBiometricDataResponse			Y	The response to a RetrieveBiometricData operation.
↑ RetrieveBiometricDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Includes the biometric data associated with a subject.
↑ BiometricData	<a href="#">BIASBiometricDataType</a>	1	Y	An Identity's biometric data.
↑ BIRList	<a href="#">CBEFF_BIR_ListType</a>	1	Y	A list of CBEFF-BIR elements.
↑ BIR	<a href="#">CBEFF_BIR_Type</a>	0..*	N	CBEFF structure containing information about a biometric sample.

## 656 4.1.21 RetrieveDocumentData

### 657 [RetrieveDocumentDataRequest](#)

### 658 [RetrieveDocumentDataResponse](#)

659 The RetrieveDocumentData operation retrieves the list of document data associated with a subject ID for  
660 the category(ies) specified. In the encounter-centric model, the encounter ID MAY be specified and the  
661 operation returns the list of document data associated with that encounter. If the encounter ID is not  
662 specified in the encounter-centric model, the operation returns the list of document information associated  
663 with the most recent encounter for which document data exist. If no gallery ID is specified, document data

664 from all galleries must be returned. If no document category is specified, all documents associated with  
665 the subject (and encounter ID, if present) must be returned.

## 666 Request Message

Field	Type	#	?	Meaning
RetrieveDocumentData			Y	
↳ RetrieveDocumentDataRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "RetrieveDocumentData".
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	
↳ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
↳ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.
↳ EncounterType	<a href="#">EncounterCategoryType</a>	0..1	C	Identifies the category of encounter.
↳ DocumentData	<a href="#">DocumentDataType</a>	0..1	N	Defines a set of document data elements providing information about the requested identity document.
↳ DocumentCategory	<u>string</u>	0..1	Y	The category(ies) of the identity documents to be retrieved.
↳ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group from which the biographic information will be retrieved.



## 667 Response Message

Field	Type	#	?	Meaning
RetrieveDocumentDataResponse			Y	The response to a RetrieveDocumentData operation.
↑ RetrieveDocumentDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ DocumentDataList	<a href="#">DocumentDataListType</a>	1	Y	A list of document data associated with a subject or encounter.

## 668 4.1.22 SetBiographicData

669 [SetBiographicDataRequest](#)

670 [SetBiographicDataResponse](#)

671 The SetBiographicData operation associates biographic data to a given subject record. The identity  
672 model of the system determines whether the biographic information should replace any existing  
673 biographic information (person-centric model) or if a new encounter should be created and associated  
674 with the subject (encounter-centric model). For encounter-centric models, the encounter ID MAY be  
675 specified by the caller in order to link biographic with biometric and/or document information (assuming  
676 biometric and/or document information was previously associated using the [SetBiometricData](#) and/or  
677 [SetDocumentData](#) operations). If the encounter ID is omitted for the encounter-centric model, the  
678 operation returns a system-assigned encounter ID.

679 For encounter-based systems, the Create Encounter operation should be called prior to Set Biographic  
680 Data and/or Set Document Data. The Encounter ID assigned as a result should be used as input to this  
681 operation.

## 682 Request Message

Field	Type	#	?	Meaning
SetBiographicData			Y	Associates biographic data to a given subject record.
↑ SetBiographicDataRequest		1	Y	

Field	Type	#	?	Meaning
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "SetBiographicData".
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biographic data to store.
↳ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↳ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.
↳ BiographicData	<a href="#">BiographicDataType</a>	1	Y	An Identity's biographic data. One of the following elements MUST be present.
↳ LastName	string	0..1	C	The last name of a subject.
↳ FirstName	string	0..1	C	The first name of a subject.
↳ BiographicDataItemList	<a href="#">BiographicDataItemListType</a>	0..1	C	A list of biographic data elements.
↳ BiographicDataSet	<a href="#">BiographicDataSetType</a>	0..1	C	A set of biographic data information.

Field	Type	#	?	Meaning
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group to which the biographic will be added.

## 683 Response Message

Field	Type	#	?	Meaning
SetBiographicDataResponse			Y	The response to a SetBiographicData operation.
↑ SetBiographicDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	0..1	C	In an encounter-centric model, identifies the encounter ID assigned to a new encounter.
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of an encounter associated with the subject.

## 684 4.1.23 SetBiometricData

685 [SetBiometricDataRequest](#)

686 [SetBiometricDataResponse](#)

687 The SetBiometricData operation associates biometric data to a given subject record. The identity model  
688 of the system determines whether the biometric information should replace any existing biometric  
689 information (person-centric model) or if a new encounter should be created and associated with the  
690 subject (encounter-centric model). For encounter-centric models, the encounter ID MAY be specified by  
691 the caller in order to link biometric with biographic and/or document information (assuming biographic  
692 and/or document information was previously associated using the [SetBiographicData](#) and/or  
693 [SetDocumentData](#) operation). If the encounter ID is omitted for the encounter-centric model, the  
694 operation returns a system-assigned encounter ID.

695 For encounter-based systems, the Create Encounter operation should be called prior to Set Biometric  
696 Data. The Encounter ID assigned as a result should be used as input to this operation.

## 697 Request Message

Field	Type	#	?	Meaning
SetBiometricData			Y	Associates biometric data to a given subject record.

Field	Type	#	?	Meaning
↑ SetBiometricDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "SetBiometricData".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biometric data to store.
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.
↑ BiometricData	<a href="#">BIASBiometricDataType</a>	1	Y	An Identity's biometric data.
↑ BIRList	<a href="#">CBEFF_BIR_ListType</a>	1	Y	A list of CBEFF-BIR elements.
BIR ↑	<a href="#">CBEFF_BIR_Type</a>	1..*	Y	CBEFF structure containing information about a biometric sample.
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group to which the biometric will be added.

## 698 Response Message

Field	Type	#	?	Meaning
SetBiometricDataResponse			Y	The response to a SetBiometricData operation.
↑ SetBiometricDataResponsePackage		1	Y	

Field	Type	#	?	Meaning
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

#### 4.1.24 SetDocumentData

##### [SetDocumentDataRequest](#)

##### [SetDocumentDataResponse](#)

The SetDocumentData operation associates identity document data to a given subject record. The identity model of the system determines whether the document information should replace any existing document information for the same document category (person-centric model) or if a new encounter should be created and associated with the subject (encounter-centric model). For encounter-centric models, the encounter ID MAY be specified by the caller in order to link document with biographic and/or biometric information (assuming biographic and/or biometric information was previously associated using the [SetBiographicData](#) and/or [SetBiometricData](#) operation). If the encounter ID is omitted for the encounter-centric model, the operation returns a system-assigned encounter ID.

#### Request Message

Field	Type	#	?	Meaning
SetDocumentData			Y	
↑ SetDocumentDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "SetDocumentData".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier of an encounter associated with the subject.

Field	Type	#	?	Meaning
↑ DocumentDataList	<a href="#">DocumentDataListType</a>	1	Y	A list of document data to associate with the subject or encounter.
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group to which the document information will be added.

## 711 Response Message

Field	Type	#	?	Meaning
SetDocumentDataResponse			Y	The response to a SetDocumentData operation.
↑ SetDocumentDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of an encounter associated with the subject.

## 712 4.1.25 TransformBiometricData

713 [TransformBiometricDataRequest](#)

714 [TransformBiometricDataResponse](#)

715 The TransformBiometricData operation transforms or processes a given biometric in one format into a  
716 new target format.

## 717 Request Message

Field	Type	#	?	Meaning
TransformBiometricData			Y	Transforms or processes a given biometric in one format into a new target format.

Field	Type	#	?	Meaning
↑ TransformBiometricDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "TransformBiometricData".
↑ InputBIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	Data structure containing the biometric information to be transformed.
↑ TransformOperation	unsignedLong	1	Y	Value indicating the type of transformation to perform.
↑ TransformControl	string	0..1	N	Specifies controls for the requested transform operation.  Note: This could be a compression ratio, target data format, etc.

718 NOTE: The values for TransformOperation and TransformControl are implementation specific.

## 719 Response Message

Field	Type	#	?	Meaning
TransformBiometricDataResponse			Y	The response to a TransformBiometricData operation.
↑ TransformBiometricDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.

Field	Type	#	?	Meaning
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ OutputBIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	Data structure containing the new, transformed biometric information.

## 4.1.26 UpdateBiographicData

[UpdateBiographicDataRequest](#)

[UpdateBiographicDataResponse](#)

The UpdateBiographicData operation updates the biographic data for an existing subject record. The operation replaces any existing biographic data with the new biographic data. In the encounter-centric model, the encounter ID MUST be specified.

### Request Message

Field	Type	#	?	Meaning
UpdateBiographicData			Y	Updates the biographic data for a given subject record.
↑ UpdateBiographicDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "UpdateBiographic Data".
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biographic data to update.



Field	Type	#	?	Meaning
⌞ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
⌞ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
⌞ BiographicData	<a href="#">BiographicDataType</a>	1	Y	An Identity's biographic data. One of the following elements MUST be present.
⌞ LastName	string	0..1	C	The last name of a subject.
⌞ FirstName	string	0..1	C	The first name of a subject.
⌞ BiographicDataItemList	<a href="#">BiographicDataItemListType</a>	0..1	C	A list of biographic data elements.
⌞ BiographicDataItem	<a href="#">BiographicDataItemType</a>	1..*	Y	A single biographic data element.
⌞ Name	string	1	Y	The name of the biographic data item.
⌞ Type	string	1	Y	The data type for the biographic data item.
⌞ Value	string	0..1	N	The value assigned to the biographic data item.
⌞ BiographicDataSet	<a href="#">BiographicDataSetType</a>	0..1	C	A set of biographic data information.

## 727 Response Message

Field	Type	#	?	Meaning
UpdateBiographicDataResponse			Y	The response to an UpdateBiographicData operation.
⌞ UpdateBiographicDataResponsePackage		1	Y	

Field	Type	#	?	Meaning
↳ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↳ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↳ Message	string	0..1	N	A short message corresponding to the return code.

## 4.1.27 UpdateBiometricData

### [UpdateBiometricDataRequest](#)

### [UpdateBiometricDataResponse](#)

The UpdateBiometricData operation updates the biometric data for an existing subject record. The operation includes an OPTIONAL parameter indicating if the new biometric sample should be merged with the existing biometric sample. If this parameter is set to “False” or is not used in the request, the operation replaces the existing biometric sample with the new biometric sample. The “merge” process is determined by the implementation. It may be accomplished by adding the sample to a multi-sample record or by performing some level of biometric fusion (for example, feature or sample level fusion). In the encounter-centric model, the encounter ID MUST be specified.

## Request Message

Field	Type	#	?	Meaning
UpdateBiometricData			Y	Updates a single biometric sample for a given subject record.
↳ UpdateBiometricDataRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: “UpdateBiometricData”.
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biometric data to update.

Field	Type	#	?	Meaning
⤴ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
⤴ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
⤴ BiometricData	<a href="#">BIASBiometricDataType</a>	1	Y	An Identity's biometric data.
⤴ BIR	<a href="#">CBEFF_BIR_Type</a>	1	Y	Contains biometric information in either a non-XML or an XML representation.
⤴ Merge	boolean	0..1	N	Value indicating if the input biometric sample should be merged with any existing biometric information.

## 739 Response Message

Field	Type	#	?	Meaning
UpdateBiometricDataResponse			Y	The response to an UpdateBiometricData operation.
⤴ UpdateBiometricDataResponsePackage		1	Y	
⤴ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
⤴ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
⤴ Message	string	0..1	N	A short message corresponding to the return code.

## 740 4.1.28 UpdateDocumentData

741 [UpdateDocumentDataRequest](#)

742 [UpdateDocumentDataResponse](#)

743 The UpdateDocumentData operation updates the document data for an existing subject record. The  
744 operation replaces any existing document data of the same category with the new document data. In the  
745 encounter-centric model, the encounter ID MUST be specified.

**Request Message**

Field	Type	#	?	Meaning
UpdateDocumentData			Y	Updates the document data for a given subject record.
↳ UpdateDocumentDataRequest		1	Y	
↳ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↳ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↳ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↳ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "UpdateDocumentData".
↳ Identity	<a href="#">BIASIdentity</a>	1	Y	Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the document data to update.
↳ SubjectID	<a href="#">BIASIDType</a>	1	Y	A system unique identifier for a subject.
↳ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required for encounter-centric models.
↳ DocumentDataList	<a href="#">DocumentDataListType</a>	1	Y	A list of updated document data.

## 747 Response Message

Field	Type	#	?	Meaning
UpdateDocumentDataResponse			Y	The response to an UpdateDocumentData operation.
↑ UpdateDocumentDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.

## 748 4.1.29 VerifySubject

749 [VerifySubjectRequest](#)

750 [VerifySubjectResponse](#)

751 The VerifySubject operation performs a 1:1 verification match between a given biometric and either a  
752 claim to identity in a given gallery or another provided biometric. As such either the Identity Claim or  
753 Reference BIR input parameters are REQUIRED.

754 In the encounter-centric model, for match operations, it is not necessary to explicitly create an encounter.  
755 The BIAS service provider will create the encounter and will set the encounter type to “recognition”.

## 756 Request Message

Field	Type	#	?	Meaning
VerifySubject			Y	Performs a 1:1 verification match between a given biometric and either a claim to identity in a given gallery or another given biometric.
↑ VerifySubjectRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.

Field	Type	#	?	Meaning
BIASOperationName <sup>↑</sup>	string	0..1	N	Identifies the BIAS operation that is being requested: "VerifySubject".
GalleryID <sup>↑</sup>	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group of which the subject must be a member. Required if an Identity Claim is provided.
Identity <sup>↑</sup>	<a href="#">BIASIdentity</a>	1	Y	Includes the identifying information and/or input and reference biometric samples.
IdentityClaim <sup>↑</sup>	<a href="#">BIASIDType</a>	0..1	C	A unique identifier by which a subject is known to a particular gallery or population group. (e.g. Subject ID or account number) Required if a Reference BIR is not provided.
BiometricData <sup>↑</sup>	<a href="#">BIASBiometricDataType</a>	1	Y	An Identity's biometric data.
InputBIR <sup>↑</sup>	<a href="#">CBEFF_BIR_Type</a>	1	Y	Maps to specific ISO/IEC BIAS elements as required by that specification. When multiple samples are included as input (e.g. in a multimodal operation), a complex BIR is used.
ReferenceBIR <sup>↑</sup>	<a href="#">CBEFF_BIR_Type</a>	0..1	C	Maps to specific ISO/IEC BIAS elements as required by that specification. Required if an Identity Claim is not provided.

## 757 Response Message

Field	Type	#	?	Meaning
VerifySubjectResponse			Y	The response to a VerifySubject operation.

Field	Type	#	?	Meaning
↑ VerifySubjectResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Match	boolean	0..1	Y	Indicates if the Input BIR matched either the biometric information associated with the Identity Claim or the Reference BIR.
↑ Score	<a href="#">ScoreType</a>	0..1	N	The score if the biometric information matched.

## 4.2 Aggregate Operations

### 4.2.1 Delete

[DeleteRequest](#)

[DeleteResponse](#)

The Delete operation deletes an existing subject or, in an encounter-centric model, an existing encounter from the system. This may be accomplished in a number of different ways according to system requirements and/or resources. If the Delete operation is implemented as a synchronous service, the implementing system immediately processes the request and returns the results in the Return Data parameter. If the Delete operation is implemented as an asynchronous service, the implementing system returns a token in the Token parameter, which is an indication that the request is being handled asynchronously. In this case, the [GetDeletionResults](#) operation is used to poll for the results of the Delete request.

### Request Message

Field	Type	#	?	Meaning
Delete			Y	Deletes a subject or, in an encounter-centric model, an existing encounter from the system.
↑ DeleteRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.

Field	Type	#	?	Meaning
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "Delete".
↑ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
↑ InputData	<a href="#">InformationType</a>	0..1	N	Contains the input data for the operation, as required by the implementing system.
↑ Identity	<a href="#">BIASIdentity</a>	0..1	N	The identifier for the subject, or in encounter-centric model the encounter to be deleted; required for encounter-centric models.
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	The identifier assigned to the subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier for the encounter; required for encounter-centric models.

## 771 Response Message

Field	Type	#	?	Meaning
DeleteResponse			Y	The response to a Delete operation.
↑ DeleteResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	The identifier assigned to the subject.



Field	Type	#	?	Meaning
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the encounter; required for encounter-centric models.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Token	<a href="#">TokenType</a>	0..1	C	A token used to retrieve the results of the Delete request; returned with asynchronous request processing. If set to zero, operation is processed synchronously. If set to a non-zero value, operation is processed asynchronously and Get Deletion Results must be used to retrieve the results.
TokenValue	string	1	Y	A value returned by the implementing system that is used by Get Deletion Results to retrieve the results at a later time.
Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 4.2.2 Enroll

### [EnrollRequest](#)

### [EnrollResponse](#)

The Enroll operation adds a new subject or, in an encounter-centric model, a new encounter to the system. This may be accomplished in a number of different ways according to system requirements and/or resources. If the Enroll operation is implemented as a synchronous service, the implementing system immediately processes the request and returns the results in the Return Data parameter. If the Enroll operation is implemented as an asynchronous service, the implementing system returns a non-zero token in the Token parameter, which is an indication that the request is being handled asynchronously. In this case, the [GetEnrollResults](#) operation is used to poll for the results of the Enroll request.

If the identity model is encounter-centric, the encounter ID may optionally be specified by the caller. If the encounter ID is omitted the operation returns a system-assigned encounter ID.

## Request Message

Field	Type	#	?	Meaning
Enroll			Y	Adds a new subject or, in an encounter-centric model, a new encounter to the system.
↑ EnrollRequest		1	Y	

Field	Type	#	?	Meaning
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "Enroll".
↑ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
↑ InputData	<a href="#">InformationType</a>	1	Y	Contains the input data for the operation, as required by the implementing system.
↑ Identity	<a href="#">BIASIdentity</a>	0..1	N	
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	N	The identifier for the encounter; required for encounter-centric models.

## 786 Response Message

Field	Type	#	?	Meaning
EnrollResponse			Y	The response to an Enroll operation.
↑ EnrollResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	The identifier assigned to the subject.

Field	Type	#	?	Meaning
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the encounter; required for encounter-centric models.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Token	<a href="#">TokenType</a>	0..1	C	A token used to retrieve the results of the Enroll request; returned with asynchronous request processing. If set to zero, operation is processed synchronously. If set to a non-zero value, operation is processed asynchronously and Get Enroll Results must be used to retrieve the results.
TokenValue	string	1	Y	A value returned by the implementing system that is used by Get Enroll Results to retrieve the results at a later time.
Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

### 4.2.3 GetDeletionResults

[GetDeletionResultsRequest](#)

[GetDeletionResultsResponse](#)

The GetDeletionResults operation retrieves the deletion results for the specified token. This operation is used in conjunction with the [Delete](#) operation. If the Delete operation is implemented as an asynchronous service, the implementing system returns a token and the GetDeletionResults operation is used to poll for the results of the original Delete request.

If the service provider implements an asynchronous Delete operation, then it MUST also implement the Get Deletion Results operation.

### Request Message

Field	Type	#	?	Meaning
GetDeletionResults			Y	Retrieves the deletion results for the specified token.
↑ GetDeletionResultsRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.

Field	Type	#	?	Meaning
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "GetDeletionResults".
↑ Token	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of the Delete request.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
↑ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 797 Response Message

Field	Type	#	?	Meaning
GetDeletionResultsResponse			Y	The response to a GetDeletionResults operation.
↑ GetDeletionResultsResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.

## 798 4.2.4 GetEnrollResults

799 [GetEnrollResultsRequest](#)

800 [GetEnrollResultsResponse](#)

801 The GetEnrollResults operation retrieves the enrollment results for the specified token. This operation is  
802 used in conjunction with the [Enroll](#) operation. If the Enroll operation is implemented as an asynchronous  
803 service, the implementing system returns a token and the GetEnrollResults operation is used to poll for  
804 the results of the original Enroll request.

805 If the service provider implements an asynchronous Enroll operation, then it MUST also implement the  
806 GetEnrollResults operation.

## 807 Request Message

Field	Type	#	?	Meaning
GetEnrollResults			Y	Retrieves the enrollment results for the specified token.
⌞ GetEnrollResultsRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "GetEnrollResults".
⌞ Token	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of the Enroll request.
⌞ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
⌞ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 808 Response Message

Field	Type	#	?	Meaning
GetEnrollResultsResponse			Y	The response to a GetEnrollResults operation.

Field	Type	#	?	Meaning
↑ GetEnrollResultsResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	The identifier assigned to the subject.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the encounter; if assigned.

## 4.2.5 GetIdentifyResults

[GetIdentifyResultsRequest](#)

[GetIdentifyResultsResponse](#)

The GetIdentifyResults operation retrieves the identification results for the specified token. This operation is used in conjunction with the [Identify](#) operation. If the Identify operation is implemented as an asynchronous service, the implementing system returns a token and the GetIdentifyResults operation is used to poll for the results of the original Identify request.

If the service provider implements an asynchronous Identify operation, then it MUST also implement the GetIdentifyResults operation.

## Request Message

Field	Type	#	?	Meaning
GetIdentifyResults			Y	Retrieves the identification results for the specified token
↑ GetIdentifyResultsRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.

Field	Type	#	?	Meaning
BIASOperationName ↑	string	0..1	N	Identifies the BIAS operation that is being requested: "GetIdentifyResults".
Token ↑	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of the Identify request.
TokenValue ↑	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
Expiration ↑	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 819 Response Message

Field	Type	#	?	Meaning
GetIdentifyResultsResponse			Y	The response to a GetIdentifyResults operation.
GetIdentifyResultsResponsePackage ↑		1	Y	
ResponseStatus ↑	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
Return ↑	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
Message ↑	string	0..1	N	A short message corresponding to the return code.
Identity ↑	<a href="#">BIASIdentity</a>			
EncounterID ↑	<a href="#">BIASIDType</a>	0..1	C	The identifier of the encounter, if assigned.
CandidateList ↑	<a href="#">CandidateListType</a>	0..1	C	A rank-ordered list of candidates that have a likelihood of matching the input biometric sample.
ReturnData ↑	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.

## 4.2.6 GetUpdateResults

[GetUpdateResultsRequest](#)

[GetUpdateResultsResponse](#)

The GetUpdateResults operation retrieves the update results for the specified token. This operation is used in conjunction with the [Update](#) operation. If the Update operation is implemented as an asynchronous service, the implementing system returns a token and the GetUpdateResults operation is used to poll for the results of the original Update request.

If the service provider implements an asynchronous Update operation, then it MUST also implement the GetUpdateResults operation.

### Request Message

Field	Type	#	?	Meaning
GetUpdateResults			Y	Retrieves the Update results for the specified token
⌞ GetUpdateResultsRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "GetUpdateResults".
⌞ Token	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of the Update request.
⌞ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
⌞ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.



## 830 Response Message

Field	Type	#	?	Meaning
GetUpdateResultsResponse			Y	The response to a GetUpdateResults operation.
↑ GetUpdateResultsResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.

## 831 4.2.7 GetVerifyResults

832 [GetVerifyResultsRequest](#)

833 [GetVerifyResultsResponse](#)

834 The GetVerifyResults operation retrieves the verification results for the specified token. This operation is  
835 used in conjunction with the [Verify](#) operation. If the Verify operation is implemented as an asynchronous  
836 service, the implementing system returns a non-zero token and the GetVerifyResults operation is used to  
837 poll for the results of the original Verify request.

838 If the service provider implements an asynchronous Verifyoperation, then it MUST also implement the  
839 GetVerifyResults operation.

## 840 Request Message

Field	Type	#	?	Meaning
GetVerifyResults			Y	Retrieves the verification results for the specified token
↑ GetVerifyResultsRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.

Field	Type	#	?	Meaning
BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "GetVerifyResults".
Token	<a href="#">TokenType</a>	1	Y	A value used to retrieve the results of the Verify request.
TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 841 Response Message

Field	Type	#	?	Meaning
GetVerifyResultsResponse			Y	The response to a GetVerifyResults operation.
GetVerifyResultsResponsePackage		1	Y	
ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
Message	string	0..1	N	A short message corresponding to the return code.
ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
Identity	<a href="#">BIASIdentity</a>	0..1	C	
EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of the encounter, if assigned.
Match	boolean	1	Y	Indicates if the Input BIR matched either the biometric information associated with the Identity Claim or the Reference BIR.

Field	Type	#	?	Meaning
↑ Score	<a href="#">ScoreType</a>	0..1	N	The score if the biometric information matched.

## 4.2.8 Identify

[IdentifyRequest](#)

[IdentifyResponse](#)

The Identify operation performs an identification function according to system requirements and/or resources. If the Identify operation is implemented as a synchronous service, the implementing system immediately processes the request and returns the results in the Return Data parameter. If the Identify operation is implemented as an asynchronous service, the implementing system returns a non-zero token in the Token parameter, which is an indication that the request is being handled asynchronously. In this case, the [GetIdentifyResults](#) operation is used to poll for the results of the Identify request.

## Request Message

Field	Type	#	?	Meaning
Identify			Y	Performs an identification function.
IdentifyRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "Identify".
↑ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
↑ InputData	<a href="#">InformationType</a>	1	Y	Contains the input data for the aggregate services.

Field	Type	#	?	Meaning
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	N	The identifier of the gallery or population group which will be searched; this parameter may also be used to identify an external system where the identification request should be forwarded, if this capability is supported by the implementing system.
↑ MaxListSize	positiveInteger	1	Y	The maximum size of the candidate list that should be returned.

## 852 Response Message

Field	Type	#	?	Meaning
IdentifyResponse			Y	The response to an Identify operation.
↑ IdentifyResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Identity	<a href="#">BIASIdentity</a>	0..1	C	
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of the encounter, if assigned.
↑ CandidateList	<a href="#">CandidateListType</a>	0..1	C	A rank-ordered list of candidates that have a likelihood of matching the input biometric sample; returned with successful, synchronous processing.

Field	Type	#	?	Meaning
↑ Token	<a href="#">TokenType</a>	0..1	C	A value used to retrieve the results of the Identify request; returned with asynchronous request processing. If set to zero, operation is processed synchronously and candidate list is returned. If set to a non-zero value, operation is processed asynchronously and Get Identify Results must be used to retrieve the results.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
↑ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

## 4.2.9 RetrieveData

[RetrieveDataRequest](#)

[RetrieveDataResponse](#)

The RetrieveData operation retrieves requested information about a subject, or in an encounter-centric model about an encounter. In a person-centric model, this operation can be used to retrieve both biographic and biometric information for a subject record. In an encounter-centric model, this operation can be used to retrieve biographic and/or biometric information for either a single encounter or all encounters. Either a subject ID or encounter ID MUST be specified.

## Request Message

Field	Type	#	?	Meaning
RetrieveData			Y	Retrieves requested information about a subject or encounter.
↑ RetrieveDataRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.

Field	Type	#	?	Meaning
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "RetrieveData".
↑ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed, and MAY identify what type(s) of information should be returned.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Includes the identifier of the subject or encounter.
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	A system unique identifier for a subject. Required if an Encounter ID is not provided.
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject. Required if a Subject ID is not provided.

## 862 Response Message

Field	Type	#	?	Meaning
RetrieveDataResponse			Y	Response to a RetrieveData operation.
↑ RetrieveDataResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.

## 863 4.2.10 Update

864 [UpdateRequest](#)

865 [UpdateResponse](#)

866 The Update operation updates specified information about a subject, or in an encounter-centric model  
 867 about an encounter. In a person-centric model, this operation can be used to update both biographic,  
 868 biometric and document information for a subject record. In an encounter-centric model, this operation  
 869 can be used to update biographic, biometric and/or document information for either a single encounter or  
 870 all encounters. Either a subject ID or encounter ID MUST be specified.

## 871 Request Message

Field	Type	#	?	Meaning
Update			Y	Updates requested information about a subject or encounter.
↑ UpdateRequest		1	Y	
↑ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
↑ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
↑ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
↑ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "Update".
↑ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed, and MAY identify what type(s) of information should be returned.
↑ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
↑ InputData	<a href="#">InformationType</a>	1	Y	Contains the subject data to update.
↑ Identity	<a href="#">BIASIdentity</a>	1	Y	Includes the identifier of the subject or encounter.
↑ SubjectID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the subject; Required if an Encounter ID is not provided.

Field	Type	#	?	Meaning
↑ EncounterID	<a href="#">BIASIDType</a>	0..1	C	The identifier of an encounter associated with the subject.  Required if a Subject ID is not provided.

## 872 Response Message

Field	Type	#	?	Meaning
UpdateResponse			Y	Response to an Update operation.
↑ UpdateResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Token	<a href="#">TokenType</a>	0..1	C	A value used to retrieve the results of the Update request; returned with asynchronous request processing. If set to zero, operation is processed synchronously. If set to a non-zero value, operation is processed asynchronously and Get Update Results must be used to retrieve the results.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
↑ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.



## 4.2.11 Verify

[VerifyRequest](#)

[VerifyResponse](#)

The Verify operation performs a 1:1 verification function according to system requirements and/or resources. Either the Identity Claim or Reference BIR input parameters are REQUIRED. If the Verify operation is implemented as a synchronous service, the implementing system immediately processes the request and returns the results in the Return Data parameter. If the Verify operation is implemented as an asynchronous service, the implementing system returns a non-zero token in the Token parameter, which is an indication that the request is being handled asynchronously. In this case, the [GetVerifyResults](#) operation is used to poll for the results of the Verify request.

In encounter mode, for match operations, the BIAS service provider will create the encounter and will set the encounter type to "recognition". Additionally the encounter ID may optionally be specified by the caller. If the encounter ID is omitted for the encounter-centric model, the service should return a system-assigned encounter ID.

## Request Message

Field	Type	#	?	Meaning
Verify			Y	Performs a 1:1 verification function.
⌞ VerifyRequest		1	Y	
⌞ GenericRequestParameters	<a href="#">GenericRequestParameters</a>	0..1	N	Common request parameters that can be used to identify the requester.
⌞ Application	<a href="#">ApplicationIdentifier</a>	0..1	N	Identifies the requesting application.
⌞ ApplicationUser	<a href="#">ApplicationUserIdentifier</a>	0..1	N	Identifies the user or instance of the requesting application.
⌞ BIASOperationName	string	0..1	N	Identifies the BIAS operation that is being requested: "Verify".
⌞ ProcessingOptions	<a href="#">ProcessingOptionsType</a>	1	Y	Options that guide how the aggregate service request is processed.
⌞ Option	<a href="#">OptionType</a>	0..*	N	An option supported by the implementing system.
⌞ InputData	<a href="#">InformationType</a>	1	Y	Contains the input data for the aggregate services.
⌞ Identity	<a href="#">BIASIdentity</a>	1	Y	Includes either the Identity Claim or Reference BIR.

Field	Type	#	?	Meaning
↑ IdentityClaim	<a href="#">BIASIDType</a>	0..1	C	An identifier by which a subject is known to a particular gallery or population group. Required if a Reference BIR is not provided.
↑ BiometricData	<a href="#">BIASBiometricDataType</a>	0..1	N	An Identity's biometric data.
ReferenceBIR ↑	<a href="#">CBEFF_BIR_Type</a>	0..1	C	Maps to specific ISO/IEC BIAS elements as required by that specification. Required if an Identity Claim is not provided.
↑ GalleryID	<a href="#">BIASIDType</a>	0..1	C	The identifier of the gallery or population group of which the subject must be a member. Required if an Identity Claim is provided.

## 888 Response Message

Field	Type	#	?	Meaning
VerifyResponse			Y	The response to a Verify operation.
↑ VerifyResponsePackage		1	Y	
↑ ResponseStatus	<a href="#">ResponseStatus</a>	1	Y	Returned status for the operation.
↑ Return	<a href="#">ReturnCode</a>	1	Y	The return code indicates the return status of the operation.
↑ Message	string	0..1	N	A short message corresponding to the return code.
↑ ReturnData	<a href="#">InformationType</a>	0..1	N	Contains the output data for the response.
↑ Match	boolean	0..1	N	Indicates if the Input BIR matched either the biometric information associated with the Identity Claim or the Reference BIR.
↑ Score	<a href="#">ScoreType</a>	0..1	N	The score if the biometric information matched.

Field	Type	#	?	Meaning
↑ Identity	<a href="#">BIASIdentity</a>	0..1	C	
↑ EncounterID	<a href="#">BIASIDType</a>	1	Y	The identifier of the encounter, if assigned.
↑ Token	<a href="#">TokenType</a>	0..1	C	A value used to retrieve the results of the Verify request; returned with asynchronous request processing. If set to zero, operation is processed synchronously. If set to a non-zero value, operation is processed asynchronously and Get Verify Results must be used to retrieve the results.
↑ TokenValue	string	1	Y	A value returned by the implementing system that is used to retrieve the results to an operation at a later time.
↑ Expiration	date	1	Y	A date and time at which point the token expires and the operation results are no longer guaranteed to be available.

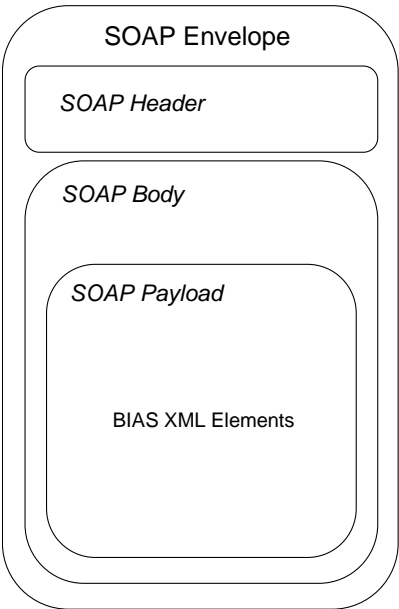
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## 5 Message structure and rules

BIAS operations and data elements are defined in XML in the ISO/IEC 30108 BIAS standard. This OASIS standard further specifies the full XML schema (see Annex A) and specifies how this XML is packaged and exchanged as SOAP messages.

Annex A provides a WSDL of operations and structures aggregated from all the conformance classes, both synchronous and asynchronous. A specific implementation's WSDL must only expose its respective operations and structures. For example, for a Class 5-only conformant implementation, all of the primitive operations must not be exposed as operations (with the exception of QueryCapabilities) unless that functionality is supported. Additionally, the WSDL exposed by an implementation shall not contain instances of `xsd:any`, `xsd:anyType`, or `xsd:anyAttribute`; these instances must be replaced with explicit schema contents. An example is the XML complex type, `InformationType`, which has `xsd:any` as its only child. This type is used to represent implementation-specific input data and return data. The children of `InformationType` must be replaced with explicit content. Doing so removes the ability to transmit unexpected or arbitrary data. Also, it provides a clear definition of information that a client needs to provide to the server, or expect to receive, to optimally perform an operation.

SOAP 1.1 messages consist of three elements: an envelope, header data, and a message body. BIAS request-response elements MUST be enclosed within the SOAP message body. The general structure of the BIAS SOAP message is shown in Figure 4, below. The data model for BIAS is addressed in Section 3 and BIAS messages in Section 4.



**Figure 4. BIAS SOAP Structure**

Biometric data, regardless of native format, is carried as a binary structure. As such, options exist on how this data is carried within the SOAP structure. It can be carried as embedded Base-64 objects or [\[XOP\]](#) can be used – this standard allows for either method (See section 5.3).

### 5.1 Purpose and constraints

This document defines a SOAP profile describing how the XML elements defined in ISO/IEC 30108 are to be used as the payload of a SOAP message and the rules for structuring and exchanging such messages. Philosophical tenets include:

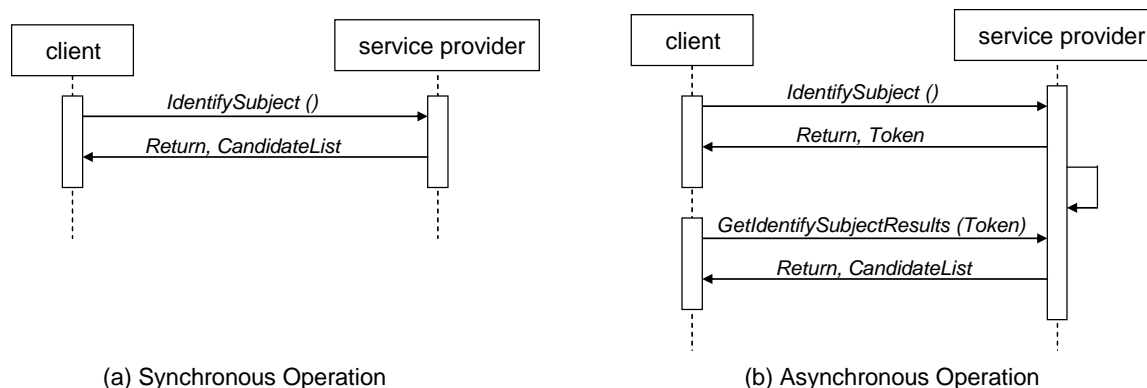
- 927 • SOAP messages will carry BIAS XML [\[XML10\]](#) payloads.
- 928 • SOAP messages will follow WS-I and will deviate only when absolutely necessary.
- 929 • Message structures and interchanges will be kept as simple as possible – “nice to have”
- 930 features will be addressed in future revisions.
- 931 • XML schemas will be produced based on ISO/IEC 30108.
- 932 • BIAS will support a broad range of application domains.
- 933 • BIAS will allow for a variety of biometric and biographic data formats to be used
- 934 • Only the SOAP messaging will be defined – no message protocols or client/server agents
- 935 will be defined.
- 936 • Basic usage/formatting rules (beyond WS-I) will be defined.
- 937 • Existing biometric and Web services standards will be leveraged wherever possible.
- 938 • Sample WSDL and use cases will be provided as an aid in implementation.
- 939 • Use of basic SOAP will allow all other compatible WS\* standards (and discovery
- 940 mechanisms) to be used in conjunction with BIAS messaging.
- 941 • BIAS will support both secure (i.e., using existing security mechanisms such as WS-
- 942 Security, SAML, etc.) and non-secure implementations.
- 943 • Generic biometric operations will be defined – use of biometrics within a Web services
- 944 authentication protocol is not addressed.
- 945 • OASIS namespace rules will be followed, though some external schemas MAY also be
- 946 referenced.

## 947 **5.2 Message requirements**

948 BIAS SOAP messages MUST conform to [\[WS-I-Basic\]](#) and [\[WS-I-Bind\]](#). A single BIAS SOAP message  
 949 MUST contain only one BIAS service request (or single BIAS service response). Binary components of  
 950 BIAS messages are already Base-64 encoded and therefore do not need to be conveyed as SOAP  
 951 attachments (though XOP MAY be utilized).

952 The system model used for BIAS conversations over SOAP is a simple request-response model. BIAS  
 953 comprises both synchronous and asynchronous operations, with the majority being of the former type.  
 954 Asynchronous operations are implemented through message pairs. That is, there are separate messages  
 955 to request the operation and to request the results of the operation. These have been defined for those  
 956 operations that are likely to take significant time to complete. For example, an identify operation can be  
 957 implemented as either a synchronous or asynchronous service as follows:

958



**Figure 5. Example of Synchronous and Asynchronous BIAS Operations**

The basic process for using SOAP for BIAS operations is:

1. A system entity acting as a BIAS requester transmits a BIAS request element within the body of a SOAP message to a system entity acting as a BIAS responder. The BIAS requester **MUST NOT** include more than one BIAS request per SOAP message or include any additional XML elements in the SOAP body.
2. The BIAS responder **MUST** return either a BIAS response element within the body of another SOAP message or generate a SOAP fault. The BIAS responder **MUST NOT** include more than one BIAS response per SOAP message or include any additional XML elements in the SOAP body. If a BIAS responder cannot, for some reason, process a BIAS request, it **MUST** generate a SOAP fault. (SOAP 1.1 faults and fault codes are discussed in [\[SOAP11\]](#) section 5.1.)
3. On receiving a BIAS response in a SOAP message, the BIAS requester **MUST NOT** send a fault code or other error messages to the BIAS responder. Since the format for the message interchange is a simple request-response pattern, adding additional items such as error conditions would needlessly complicate the protocol.

SOAP 1.1 also defines an optional data encoding system. This system is not used within the BIAS SOAP binding. This means that BIAS messages can be transported using SOAP without re-encoding from the “standard” BIAS schema to one based on the SOAP encoding.

NOTE: [\[SOAP11\]](#) references an early draft of the XML Schema specification including an obsolete namespace. BIAS requesters **SHOULD** generate SOAP documents referencing only the final XML schema namespace. BIAS responders **MUST** be able to process both the XML schema namespace used in [\[SOAP11\]](#) as well as the final XML schema namespace.

## 5.3 Handling binary data

BIAS messages frequently contain binary data (e.g., biometric data, scanned identity documents, etc.). Two methods are provided for dealing with this:

- Embedded Base64 encoding
- XOP [\[XOP\]](#)

Use of SOAP with Attachments (SWA) is deprecated.

### 5.3.1 Base64 encoding

This method is the default method for including binary data. Binary data is Base64 encoded and included between the tags in the XML SOAP body for the appropriate data elements. Data elements using this method are indicated as such in the schema.

As an example, the CBEFF\_BIR\_Type includes, as one of the BIR types, BinaryBIR of type base64binary.

```
<xsd:element name="BinaryBIR" type="xsd:base64Binary" />
```

However, even an XML\_BIR as defined within [CBEFF3], contains a biometric data block (BDB) which may be entirely binary (most common),

```
<xsd:element name="bdb" type="xsd:base64Binary" minOccurs="0"/>
```

or contain an element which is binary (e.g., an image within an XML BDB).

### 5.3.2 Use of XOP

When XOP is used, the binary content is replaced with a reference (URI) to an attachment (i.e., MIME) which contains that “stripped” content via an xop:include. The advantage of this method is overall message size during transmission since the overhead of the embedded Base64 is not present (since the MIME attachment contains the native binary format).

Use of XOP is generally transparent to the developer, other than in how they configure their toolset. Most frameworks support this; however, there is a possibility of mismatch if the transmitter supports and uses XOP but the receiver does not.

## 5.4 Discovery

BIAS implementers (service providers) MUST provide WSDL [WSDL11] to describe their implementations. This WSDL MAY or may not be made public via a standard discovery mechanism (such as UDDI) or other method.

In addition, it is REQUIRED that the BIAS implementation include the QueryCapabilities operation to provide dynamic information regarding BIAS capabilities, options, galleries, etc. that are supported.

## 5.5 Identifying operations

Receivers of BIAS SOAP messages require a method of easily identifying the operation being requested (or response being provided). This SHOULD be possible without the receiver needing to infer it from the sum of the elements provided within the body of the SOAP message. The BIAS SOAP profile allows for two methods of identifying BIAS operations:

- Explicit named element in body of the SOAP message
- Use of WS-Addressing Action element

### 5.5.1 Operation name element

The BIAS message sender (requester) will include within the body of the BIAS SOAP message an XML element <BIASOperationName>. The receiver (service provider) can search for this tag within a received BIAS SOAP message to determine what operation is being requested. There is no requirement related to the ordering of this element within the message, though it is RECOMMENDED that it be included early in the message to aid in human readability.

An example of this method for the CreateSubject operation is shown below:

```
POST /bias HTTP/1.1
```

```
Host: www.acme.com
```

```
Content-Type: application/soap+xml; charset="utf-8"
```

```

1037 Content-Length: nnnn
1038 SOAPAction: ""
1039 <?xml version="1.0"?>
1040 <soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
1041     <soap:Body>
1042     <tns:CreateSubjectRequest                xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
1043         <tns:GenericRequestParameters>
1044             <tns:Application>BIAS Application</tns:Application>
1045             <tns:ApplicationUser>BIAS User</tns:ApplicationUser>
1046             <tns:BIASOperationName>CreateSubject</tns:BIASOperationName>
1047         </tns:GenericRequestParameters>
1048         <tns:Identity>
1049             <tns:SubjectID>123456789</tns:SubjectID>
1050         </tns:Identity>
1051     </tns:CreateSubjectRequest>
1052     </soap:Body>
1053 </soap:Envelope>

```

## 1054 5.5.2 WS-Addressing Action

1055 WS-Addressing [WS-Addr] provides a mechanism for including action information inside any SOAP  
1056 message. The information is in the SOAP Header. The WS-Addressing 'Action' element is used to  
1057 indicate the intent of the message. The value is a URI/IRI identifying that intent; however, there are no  
1058 restrictions on the format or specificity of the URI/IRI nor a requirement that it can be resolved. Adoption  
1059 of this option also requires that the WS-Addressing 'To', 'ReplyTo', and 'MessageID' elements are  
1060 supplied, as they are mandatory elements in a request-reply message pattern as used within BIAS.  
1061 Response messages would also need to use WS-Addressing, requiring the 'To' (matching the 'ReplyTo'  
1062 element in the request), 'RelatesTo' (matching the 'MessageID' element in the request), and  
1063 'RelationshipType' (default value to "wsa:Reply") elements.

1064 Use of WS-Addressing is OPTIONAL in this profile as is this method of using the 'Action' field for this  
1065 purpose. However, when BIAS is used within an environment using WS-Addressing, it is  
1066 RECOMMENDED that this approach for use of the 'Action' field to carry the BIAS operation name is  
1067 employed, either alone or in combination with the BIASOperationName approach described in section  
1068 5.5.1.

1069 An example for a message request for the CreateSubject operation would look like the following:

```

1070
1071 POST /bias HTTP/1.1
1072 Host: www.acme.com
1073 Content-Type: application/soap+xml; charset="utf-8"
1074 Content-Length: nnnn
1075 SOAPAction: ""
1076 <?xml version="1.0"?>
1077 <soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope"
1078     xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing">
1079     <soap:Header>
1080         <wsa:MessageID>some-ID</wsa:MessageID>
1081         <wsa:ReplyTo>

```



```

1082         <wsa:Address>response-URI</wsa:Address>
1083     </wsa:ReplyTo>
1084     <wsa:To>destination-URI</wsa:To>
1085     <wsa:Action>CreateSubject</wsa:Action>
1086 </soap:Header>
1087 <soap:Body>
1088     <tns:CreateSubjectRequest
1089         xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/" />
1090 </soap:Body>
1091 </soap:Envelope>
1092

```

## 1093 5.6 Security

1094 The end-points that exchange SOAP messages (or handle the contents of the BIAS operations) are  
1095 expected to be protected and trusted such that message-level security mechanisms may not be required.  
1096 The use of SSL (HTTPS) or VPN technology that provides end-point to end-point security is  
1097 RECOMMENDED and MAY be sufficient in some cases. Other mechanisms such as Signed XML or  
1098 WSS [WSS] could also be implemented.

1099 Unless stated otherwise, the following security statements apply to all BIAS bindings.

### 1100 5.6.1 Use of SSL 3.0 or TLS 1.0

1101 Unless otherwise specified, in any BIAS binding's use of SSL 3.0 [SSL3] or TLS1.0 [RFC2246], servers  
1102 MUST authenticate clients using a X.509 v3 certificate [X509]. The client MUST establish server identity  
1103 based on contents of the certificate (typically through examination of the certificate's subject DN field,  
1104 subjectAltName attribute, etc.).

1105 Use of transport level security in the form of SSL or TLS is OPTIONAL but highly RECOMMENDED. Use  
1106 of these mechanisms alone may not be sufficient for end-to-end integrity and confidentiality, however  
1107 (see 5.6.3 and 5.6.4 below).

### 1108 5.6.2 Data Origin Authentication

1109 Authentication of both the BIAS requester and the BIAS responder associated with a message is  
1110 OPTIONAL and depends on the environment of use: Authentication mechanisms available at the SOAP  
1111 message exchange layer or from the underlying substrate protocol (for example, in many bindings the  
1112 SSL/TLS or HTTP protocol) MAY be utilized to provide data origin authentication.

1113 Transport authentication will not meet end-to-end origin authentication requirements in bindings where  
1114 the BIAS SOAP message passes through an intermediary – in this case, message authentication is  
1115 RECOMMENDED.

1116 Note that SAML [SAML] MAY be used as the mechanism for parties to authenticate to one another.

### 1117 5.6.3 Message Integrity

1118 Message integrity of both BIAS requests and BIAS responses is OPTIONAL and depends on the  
1119 environment of use. The security layer in the underlying substrate protocol or a mechanism at the SOAP  
1120 message exchange layer MAY be used to ensure message integrity.

1121 Transport integrity will not meet end-to-end integrity requirements in bindings where the BIAS SOAP  
1122 message passes through an intermediary – in this case, message integrity is RECOMMENDED.

#### 5.6.4 Message Confidentiality

Message confidentiality of both BIAS requests and BIAS responses is OPTIONAL and depends on the environment of use. The security layer in the underlying substrate protocol or a mechanism at the SOAP message exchange layer MAY be used to ensure message confidentiality.

Transport confidentiality will not meet end-to-end confidentiality requirements in bindings where the BIAS SOAP message passes through an intermediary.

NOTE: Biometric and biographic data is likely to contain personal information the confidentiality of which SHOULD be protected accordingly. See ISO/IEC 30108, section 6.5 for further discussion.

#### 5.6.5 CBEFF BIR security features

Within BIAS, biometric data is transferred within a CBEFF BIR (as defined in ISO/IEC 19785-1). CBEFF provides for the optional encryption of the Biometric Data Block (BDB) of the BIR and for the integrity of the entire BIR. If implemented, this is indicated in the BIR header. The BIR structure defines an optional Security Block which MAY contain a digital signature (or message authentication code), encryption parameters (e.g., key name, algorithm, etc.), and/or other security related data. Such protections are associated with an individual BIR and are separate from any other protections provided at the message level.

#### 5.6.6 Security Considerations

Before deployment, each combination of authentication, message integrity, and confidentiality mechanisms SHOULD be analyzed for vulnerability in the context of the specific protocol exchange and the deployment environment.

Special care should be given to the impact of possible caching on security.

IETF RFC 2617 [RFC2617] describes possible attacks in the HTTP environment when basic or message digest authentication schemes are used.

Many of the security considerations identified in [SAML SEC] MAY also apply.

ISO/IEC 19092 [BIO SEC] describes a security framework for biometric systems including a minimum set of security requirements addressing integrity, authenticity, and confidentiality of biometric information during transmission and storage. These SHOULD be considered as part of an overall risk management approach.

NOTE: The requirements of ISO/IEC 19092, though useful across many application domains, are required for most biometric system implementations in the financial services environment. Application of this standard would make the requirements of sections 5.5.3 through 5.5.5 mandatory rather than optional. This is highly RECOMMENDED for any high security environment or where privacy concerns exist.

#### 5.6.7 Security of Stored Data

This specification does not address security considerations for stored data. It is the purview of the BIAS service provider to implement security mechanisms and protect data at rest as per their own security policies.

#### 5.6.8 Key Management

This specification does not address key management considerations with respect to implementation of cryptographic security mechanisms (e.g., for authenticity, integrity, or confidentiality).

### 5.7 Use with other WS\* standards

The intent of specifying SOAP bindings for BIAS messages is to enable the full range of existing Web services standards to be able to be applied. Some may be normative while others can be optionally applied (i.e., WS-Security, WS-Addressing). Still others may require additional profiling to be used in an

1167 interoperable manner (e.g., WS-Notification); this is left to a future revision. However, the intent is to avoid  
1168 specifying anything in the first, base version that would preclude the use of such standards in the future.

## 1169 **5.8 Tailoring**

1170 This standard provides for a common method of implementing biometric Web services; however, it does  
1171 not guarantee interoperability in a specific application. In some cases further tailoring or profiling of this  
1172 standard may be required in order to further constrain the implementation options available.

1173 NOTE: As an example, BIAS allows for a number of different biographic and biometric data formats to be  
1174 used, whereas a given application/domain MAY wish to limit this to a small set or just one of each type.  
1175 Other examples (not comprehensive) include:

- 1176       • Identification of a subset of BIAS operations to be used
- 1177       • Specification of security features to be implemented (e.g., SSL, CBEFF BIR encryption, etc.)
- 1178       • Choice of operation name identification method
- 1179       • Choice of BIR type to be used (XML, non-XML, or URI)
- 1180       • Further definition of aggregate operations
- 1181       • Use (or not) of the encounter model
- 1182       • Use (or not) of asynchronous operations
- 1183       • Process sequences
- 1184       • Implementation specific values (e.g., Transform operations/controls)

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1186

---

## 6 Error handling

There are two levels of errors that can be returned in an error response: system and service errors.

- System-level errors occur when the implementing system cannot service a request. They could result due to an internal logic error or because the implementing system does not support a particular request.
- Service-level errors occur when there is a problem transmitting or representing the service request. They could result due to an invalid service request or because of a communications error.

The ISO/IEC BIAS standard defines the error condition codes for system-level errors.

- If successful, a response message (containing a return code) will be generated.
- If unsuccessful, a SOAP fault message (containing a fault code) will be generated.

### 6.1 BIAS operation return codes

If a BIAS operation is successful, a response (service output) will be sent to the requester by the service provider. Each response message contains a response status (see section 3.2.37) and return code (see section 3.2.38) along with any response data as defined for that operation, if any. A response code of '0' indicates success.

### 6.2 SOAP fault codes

If a BIAS operation is unsuccessful, no BIAS response message is sent. Instead a SOAP fault message is returned.

Every Web service (operation) described in the BIAS WSDL may result in a fault message that will be returned in the response by the service provider in the event of an error. The fault message contains a FaultCode element as defined by the SOAP 1.1 specification (see section 3.2.5). The fault message MUST contain a Detail element in a common format, as described by the BIASFault element (see section 3.2.6).

The schema provided in Annex A defines "BIASFaultCode" and "BIASFaultDetail" types as well as "BIASFault", "BIASFaultType", "BIASFaultMessage" and "BIASFaultDescription" elements.

The list of defined BIAS fault codes is provided in section 3.2.5. Note that BIAS service providers MAY define additional fault codes unique to their service.

NOTE: See also section 5.2 for additional information on message returns and faults.

---

## 7 Conformance

Implementations claiming conformance to this standard, MUST implement, at a minimum, all mandatory requirements and provisions set forth in Clauses 3, 4, 5 and 6. If such implementations claim conformance to any OPTIONAL requirements and provisions stated in Clauses 3, 4, 5 and 6, these requirements and provisions MUST be implemented as set forth in these Clauses.

ISO/IEC 30108 [ISO/IEC-BIAS] (Annex A) specifies seven BIAS conformance classes. For each class, a set of mandatory BIAS operations is identified in order for implementations (BIAS service providers) to claim conformance. These categories are:

- Class 1: Full Primitive Services Implementation
- Class 2: Full Aggregate Services Implementation
- Class 3: Limited Primitive Services Implementation
- Class 4: Minimum Primitive Services Implementation
- Class 5: Minimum Aggregate Services Implementation
- Class 6: Matcher Primitive Services Implementation
- Class 7: Matcher Aggregate Services Implementation

In addition, the minimum capability information to be returned in response to a Query Capabilities request (the only mandatory BIAS operation across all 5 classes) is specified for each class.

These conformance classes and their associated requirements apply to this BIAS SOAP Profile.

There are no minimum set of operations required to be implemented by BIAS requesters; however, any operations implemented must conform to the requirements of Clauses 3 and 4 and those requirements within Clause 5 that are mandatory and are not specific to BIAS responders.

---

## Appendix A. XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
```

```
<!--
```

Biometric Identity Assurance Services (BIAS) SOAP Profile Version 2.0

05 August 2016

Copyright (c) OASIS Open 2016. All Rights Reserved.

```
-->
```

```
<!--
```

Document: BIAS.xml

Created on: December 17, 2009, 9:31 AM

Last Edit: August 5, 2016 by Kevin Mangold, National Institute of Standards and Technology

Description:

This document represents the WSDL definitions of BIAS Profile.

```
-->
```

```
<wsdl:definitions
```

xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"

xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"

xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"

xmlns:xsd="http://www.w3.org/2001/XMLSchema"

xmlns:soapenc="http://schemas.xmlsoap.org/soap/encoding/"

xmlns:mime="http://schemas.xmlsoap.org/wsdl/mime/"

xmlns:cbeff="http://standards.iso.org/iso-iec/19785/-3/ed-2/"

xmlns:iso\_3166\_1="http://standards.iso.org/iso/3166/-1/ed-3/"

xmlns:tns="http://docs.oasis-open.org/bioserv/ns/bias-2.0"

targetNamespace="http://docs.oasis-open.org/bioserv/ns/bias-2.0">

<wsdl:types>

<xsd:schema elementFormDefault="qualified" targetNamespace="http://docs.oasis-open.org/bioserv/ns/bias-2.0">

<xsd:import namespace="http://standards.iso.org/iso-iec/19785/-3/ed-2/" schemaLocation="cbeff\_ed2.xsd"/>

<xsd:import namespace="http://standards.iso.org/iso/3166/-1/ed-3/" schemaLocation="iso\_country\_codes.xsd"/>

<xsd:complexType name="AggregateRequestTemplate">

<xsd:annotation>

<xsd:documentation>Base template for BIAS aggregate service requests.</xsd:documentation>

</xsd:annotation>

<xsd:complexContent>

<xsd:extension base="tns:RequestTemplate">

<xsd:sequence>

<xsd:element name="ProcessingOptions" type="tns:ProcessingOptionsType" minOccurs="1" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>Options that guide how the aggregate service request is processed.</xsd:documentation>

</xsd:annotation>

</xsd:element>

<xsd:element name="InputData" type="tns:InformationType" minOccurs="1" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>Contains the input data for the aggregate service request.</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

```

</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="AggregateResponseTemplate">
  <xsd:annotation>
    <xsd:documentation>Base template for BIAS aggregate service responses.</xsd:documentation>
  </xsd:annotation>
  <xsd:complexContent>
    <xsd:extension base="tns:ResponseTemplate">
      <xsd:sequence>
        <xsd:element name="ReturnData" type="tns:InformationType" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Contains the output data for the aggregate service response.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

<xsd:simpleType name="ApplicationIdentifier">
  <xsd:annotation>
    <xsd:documentation>Identifies an application.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="255"/>
  </xsd:restriction>
</xsd:simpleType>

```



```

    </xsd:restriction>
</xsd:simpleType>
<xsd:simpleType name="ApplicationUserIdentifier">
  <xsd:annotation>
    <xsd:documentation>Identifies an application user or instance.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:minLength value="1"/>
    <xsd:maxLength value="255"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="BIASBiometricDataType">
  <xsd:annotation>
    <xsd:documentation>Wraps the various BIAS biometric types.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BIRList" type="tns:CBEFF_BIR_ListType" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A list of CBEFF-BIR elements.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="BIR" type="tns:CBEFF_BIR_Type" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Contains biometric information in either a non-XML and an XML representation.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>

```

```

<xsd:element name="InputBIR" type="tns:CBEFF_BIR_Type" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Maps to specific INCITS BIAS elements as required by that specification.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="ReferenceBIR" type="tns:CBEFF_BIR_Type" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Maps to specific INCITS BIAS elements as required by that specification.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="BiometricDataList" type="tns:BiometricDataListType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>A list of biometric data elements.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>

<xsd:simpleType name="BIASFaultCode">
  <xsd:annotation>
    <xsd:documentation>Error code referenced in a SOAP fault. </xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="UNKNOWN_ERROR">
      <xsd:annotation>
        <xsd:documentation>The service failed for an unknown reason.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

```

```

</xsd:enumeration>
<xsd:enumeration value="UNSUPPORTED_CAPABILITY">
  <xsd:annotation>
    <xsd:documentation>A requested capability is not supported by the service implementation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="INVALID_INPUT">
  <xsd:annotation>
    <xsd:documentation>The data in a service input parameter is invalid.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="BIR_QUALITY_ERROR">
  <xsd:annotation>
    <xsd:documentation>Biometric sample quality is too poor for the service to succeed.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="INVALID_BIR">
  <xsd:annotation>
    <xsd:documentation>The input BIR is empty or in an invalid or unrecognized format.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="BIR_SIGNATURE_FAILURE">
  <xsd:annotation>
    <xsd:documentation>The service could not validate the signature, if used, on the input BIR.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

```

```

<xsd:enumeration value="BIR_DECRYPTION_FAILURE">
  <xsd:annotation>
    <xsd:documentation>The service could not decrypt an encrypted input BIR.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="INVALID_ENCOUNTER_ID">
  <xsd:annotation>
    <xsd:documentation>The input encounter ID is empty or in an invalid format.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="INVALID_SUBJECT_ID">
  <xsd:annotation>
    <xsd:documentation>The input subject ID is empty or in an invalid format.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="UNKNOWN_SUBJECT">
  <xsd:annotation>
    <xsd:documentation>The subject referenced by the input subject ID does not exist.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="UNKNOWN_GALLERY">
  <xsd:annotation>
    <xsd:documentation>The gallery referenced by the input gallery ID does not exist.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="UNKNOWN_ENCOUNTER">

```

```

    <xsd:annotation>
      <xsd:documentation>The encounter referenced by the input encounter ID does not exist.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="UNKNOWN_BIOGRAPHIC_FORMAT">
    <xsd:annotation>
      <xsd:documentation>The biographic data format is not known or not supported.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="UNKNOWN_IDENTITY_CLAIM">
    <xsd:annotation>
      <xsd:documentation>The identity referenced by the input identity claim does not exist.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="INVALID_IDENTITY_CLAIM">
    <xsd:annotation>
      <xsd:documentation>The identity claim requested is already in use.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
  <xsd:enumeration value="NONEXISTANT_DATA">
    <xsd:annotation>
      <xsd:documentation>The data requested for deletion does not exist.</xsd:documentation>
    </xsd:annotation>
  </xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>

```

```

<xsd:complexType name="BIASFaultDetail">
  <xsd:annotation>
    <xsd:documentation>Defines the error information associated with a SOAP fault.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element minOccurs="1" maxOccurs="1" name="BIASFaultType" type="tns:BIASFaultCode">
      <xsd:annotation>
        <xsd:documentation>References an error code.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element minOccurs="1" maxOccurs="1" name="BIASFaultMessage" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation>Provides an explanation of the fault.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element minOccurs="0" maxOccurs="1" name="BIASFaultDescription" type="xsd:string">
      <xsd:annotation>
        <xsd:documentation>Provides detailed information about a BIAS fault, such as trace details.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="BIASIdentity">
  <xsd:annotation>
    <xsd:documentation>
      Defines a single element for encapsulating the data associated

```

with an Identity. Includes the Identity's reference identifiers,  
biographic data, and biometric data.

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element name="SubjectID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>A system unique identifier for a subject.</xsd:documentation>

</xsd:annotation>

</xsd:element>

<xsd:element name="IdentityClaim" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>An identifier by which a subject is known to a particular gallery or population group.</xsd:documentation>

</xsd:annotation>

</xsd:element>

<xsd:element name="EncounterID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>The identifier of an encounter associated with the subject, required for encounter-centric models.</xsd:documentation>

</xsd:annotation>

</xsd:element>

<xsd:element name="EncounterList" type="tns:EncounterListType" minOccurs="0" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>A list of encounters associated with a subject.</xsd:documentation>

</xsd:annotation>

</xsd:element>

<xsd:element name="BiographicData" type="tns:BiographicDataType" minOccurs="0" maxOccurs="1">

```

    <xsd:annotation>
      <xsd:documentation>An Identity's biographic data.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
<!--<xsd:element name="BiographicDataElements" type="tns:BiographicDataType" minOccurs="0" maxOccurs="1">-->
  <!--<xsd:annotation>
    <xsd:documentation>An Identity's biographic data elements that are stored in the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:element>-->
<xsd:element name="BiometricData" type="tns:BIASBiometricDataType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>An Identity's biometric data.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="BIASIDType">
  <xsd:annotation>
    <xsd:documentation>A BIAS identifier</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<xsd:complexType name="BiographicDataListType">
  <xsd:annotation>
    <xsd:documentation>Defines a list of biographic data.</xsd:documentation>
  </xsd:annotation>

```



```

<xsd:sequence>
  <xsd:element name="BiographicData" type="tns:BiographicDataType" minOccurs="0" maxOccurs="unbounded">
    <xsd:annotation>
      <xsd:documentation>Data structure containing information about a biographic record.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiographicDataItem">
  <xsd:annotation>
    <xsd:documentation>Defines a single biographic data element.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Name" type="xsd:string" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The name of the biographic data item.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Type" type="xsd:string" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The data type for the biographic data item.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Value" type="xsd:string" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The value assigned to the biographic data item.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

```

```

        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiographicDataItemListType">
    <xsd:annotation>
        <xsd:documentation>Defines a list of biographic data elements.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="BiographicDataItem" type="tns:BiographicDataItemType" minOccurs="1" maxOccurs="unbounded">
            <xsd:annotation>
                <xsd:documentation>Data structure containing information about a biographic record.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiographicDataSetType">
    <xsd:annotation>
        <xsd:documentation>Defines a set of biographic data that is formatted according to the specified format.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="name" type="xsd:string" minOccurs="1" maxOccurs="1">
            <xsd:annotation>
                <xsd:documentation>The name of the biographic data format. Use these names for common formats: FBI-EFTS, FBI-EBTS, DOD-EBTS, INT-I, NIEM,
xNAL, HR-XML.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>

```

```

<xsd:element name="version" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The version of the biographic data format (e.g., "7.1" for FBI-EFTS or "2.0" for NIEM).</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="source" type="xsd:string" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Reference to a URI/IRI describing the biographic data format. For example: (FBI-EFTS) www.fbibiospecs.org, (DOD-EBTS)
www.biometrics.dod.mil, (INT-I) www.interpol.int, (NIEM) www.niem.gov, (xNAL) www.oasis-open.org, (HR-XML) www.hr-xml.org.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="type" type="xsd:string" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The biographic data format type. Use these types for common formats: ASCII (e.g., for non-XML versions of FBI-EFTS, FBI-EBTS,
DOD-EFTS, or INT-I), XML (e.g., for NIEM, xNAL, and HR-XML or future version of FBI-EBTS).</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:any namespace="##any">
  <xsd:annotation>
    <xsd:documentation>Biographic data formatted according to a specific format.</xsd:documentation>
  </xsd:annotation>
</xsd:any>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiographicDataType">
  <xsd:annotation>
    <xsd:documentation>

```

Defines a set of biographic data elements, utilizing either the BiographicDataItem type to represent a list of elements or the BiographicDataSet type to represent a complete, formatted set of biographic information.

```
</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="LastName" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The last name of a subject.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="FirstName" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The first name of a subject.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="BiographicDataItemList" type="tns:BiographicDataItemListType" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>A list of biographic data elements.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="BiographicDataItem" type="tns:BiographicDataItemType" minOccurs="1" maxOccurs="unbounded">
    <xsd:annotation>
      <xsd:documentation>A single biographic data element.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
</xsd:element>
</xsd:annotation>
</xsd:documentation>
```

```

</xsd:element>

<xsd:element name="BiographicDataSet" type="tns:BiographicDataSetType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>A set of biographic data information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiometricDataType">
  <xsd:annotation>
    <xsd:documentation>
      Provides descriptive information about biometric data, such as
      the biometric type, subtype, and format, contained in the BDB of
      the CBEFF-BIR.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BiometricType" type="cbeff:MultipleTypesType" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="BiometricTypeCount" type="xsd:positiveInteger" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The number of biometric records having the biometric type recorded in the biometric type field.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

```

```

</xsd:element>

<xsd:element name="BiometricSubType" type="cbeff:SubtypeType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>More specifically defines the type of biometric data stored in the biometric record, as defined by CBEFF.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="BDBFormatOwner" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Identifies the standards body, working group, industry consortium, or other CBEFF biometric organization that has defined the format
for the biometric data.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="BDBFormatType" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Identifies the specific biometric data format specified by the CBEFF biometric organization recorded in the BDB Format Owner
field.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="BiometricDataListType">
  <xsd:annotation>
    <xsd:documentation>A list of biometric data elements.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BiometricData" type="tns:BiometricDataType" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>

```

```

        <xsd:documentation>Data structure containing information about a biometric record.</xsd:documentation>
    </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CandidateListType">
    <xsd:annotation>
        <xsd:documentation>
            Defines a set of candidates, utilizing the Candidate Type to
            represent each element in the set.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="Candidate" type="tns:CandidateType" minOccurs="0" maxOccurs="unbounded">
            <xsd:annotation>
                <xsd:documentation>A single candidate.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CandidateType">
    <xsd:annotation>
        <xsd:documentation>
            Defines a single candidate as a possible match in response to a
            biometric identification request.
        </xsd:documentation>
    </xsd:annotation>

```

```

</xsd:annotation>
<xsd:sequence>
  <xsd:element name="ScoreList" minOccurs="0" >
    <xsd:complexType>
      <xsd:sequence>
        <xsd:element name="Score" type="tns:ScoreType"/>
      </xsd:sequence>
    </xsd:complexType>
  </xsd:element>
  <xsd:element name="Identity" type="tns:BIASIdentity" />
  <xsd:element name="Rank" type="xsd:integer" minOccurs="1" maxOccurs="1" >
    <xsd:annotation>
      <xsd:documentation>The rank of the candidate in relation to other candidates for the same biometric identification operation.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="BiographicData" type="tns:BiographicDataType" minOccurs="0" >
    <xsd:annotation>
      <xsd:documentation>Biographic data associated with the candidate match.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
<!--<xsd:attribute name="Rank" type="xsd:integer" minOccurs="1" maxOccurs="1" ></xsd:attribute>-->

```



```

</xsd:complexType>
<xsd:complexType name="CapabilityListType">
  <xsd:annotation>
    <xsd:documentation>Defines a set of capabilities.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Capability" type="tns:CapabilityType" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>
        <xsd:documentation>A single capability.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="CapabilityName">
  <xsd:annotation>
    <xsd:documentation>A list of capability items.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="AggregateInputDataOptional">
      <xsd:annotation>
        <xsd:documentation>A data element accepted as optional input by the implementing system for the aggregate services.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
    <xsd:enumeration value="AggregateInputDataRequired">
      <xsd:annotation>
        <xsd:documentation>A data element required as input by the implementing system for the aggregate services.</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>

```

```

</xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="AggregateProcessingOption">
  <xsd:annotation>
    <xsd:documentation>A processing option supported by the implementing system for the aggregate services.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="AggregateReturnData">
  <xsd:annotation>
    <xsd:documentation>A data element returned by the implementing system for the aggregate services.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="AggregateServiceDescription">
  <xsd:annotation>
    <xsd:documentation>Describes the processing logic of an aggregate service supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="BiographicDataSet">
  <xsd:annotation>
    <xsd:documentation>Identifies a biographic data set supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="CBEFFPatronFormat">
  <xsd:annotation>
    <xsd:documentation>A patron format supported by the implementing system.</xsd:documentation>
  </xsd:annotation>

```

```

</xsd:enumeration>
<xsd:enumeration value="ClassificationAlgorithmType">
  <xsd:annotation>
    <xsd:documentation>A classification algorithm type supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="ConformanceClass">
  <xsd:annotation>
    <xsd:documentation>Identifies the conformance class of the BIAS implementation.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Gallery">
  <xsd:annotation>
    <xsd:documentation>A gallery or population group supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="IdentityModel">
  <xsd:annotation>
    <xsd:documentation>Identifies whether the implementing system is person-centric or encounter-centric based.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="MatchAlgorithm">
  <xsd:annotation>
    <xsd:documentation>A match algorithm vendor and algorithm vendor product ID supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>

```

```

<xsd:enumeration value="MatchScore">
  <xsd:annotation>
    <xsd:documentation> Identifies the use of match scores returned by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="QualityAlgorithm">
  <xsd:annotation>
    <xsd:documentation>A quality algorithm vendor and algorithm vendor product ID supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="SupportedBiometric">
  <xsd:annotation>
    <xsd:documentation>A biometric type supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="TransformOperation">
  <xsd:annotation>
    <xsd:documentation>A transform operation type supported by the implementing system.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="CapabilityType">
  <xsd:annotation>
    <xsd:documentation>Defines a single capability supported by an implementing system.</xsd:documentation>
  </xsd:annotation>

```

```

<xsd:sequence>
  <xsd:element name="CapabilityName" type="tns:CapabilityName" minOccurs="1" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The name of the capability.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="CapabilityID" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>An identifier assigned to the capability by the implementing system.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="CapabilityDescription" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>A description of the capability.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="CapabilityValue" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>A value assigned to the capability.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="CapabilitySupportingValue" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>A secondary value supporting the capability.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

```

```

<xsd:element name="CapabilityAdditionalInfo" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation> Contains additional information for the supported capability.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CBEFF_BIR_ListType">
  <xsd:annotation>
    <xsd:documentation>A list of CBEFF-BIR elements.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BIR" type="tns:CBEFF_BIR_Type" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>
        <xsd:documentation>CBEFF structure containing information about a biometric sample.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CBEFF_BIR_Type">
  <xsd:annotation>
    <xsd:documentation>Represents biometric information, with either a non-XML or XML representation.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="FormatOwner" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1"/>
    <xsd:element name="FormatType" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>

```

```

<xsd:element name="BIR_Information" minOccurs="0" maxOccurs="1">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="BIR_Info" type="cbeff:BIRInfoType" minOccurs="0" maxOccurs="1"/>
      <xsd:element name="BDB_Info" type="cbeff:BDBInfoType" minOccurs="0" maxOccurs="1"/>
      <xsd:element name="SB_Info" type="cbeff:SBInfoType" minOccurs="0" maxOccurs="1"/>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

<xsd:element name="BIR" type="tns:BaseBIRType"/>
</xsd:sequence>
</xsd:complexType>

<xsd:complexType name="BaseBIRType">
</xsd:complexType>

<xsd:complexType name="BinaryBIR">
  <xsd:complexContent>
    <xsd:extension base="tns:BaseBIRType">
      <xsd:sequence>
        <xsd:element name="Binary" type="xsd:base64Binary"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

<xsd:complexType name="URI_BIR">
  <xsd:complexContent>
    <xsd:extension base="tns:BaseBIRType">

```

```

    <xsd:sequence>
      <xsd:element name="URI" type="xsd:anyURI"/>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="XML_BIR">
  <xsd:complexContent>
    <xsd:extension base="tns:BaseBIRType">
      <xsd:sequence>
        <xsd:element name="XML" type="cbeff:BIRType"/>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:simpleType name="Classification">
  <xsd:annotation>
    <xsd:documentation>The result of a classification.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<xsd:simpleType name="ClassificationAlgorithmType">
  <xsd:annotation>
    <xsd:documentation>Type of classification algorithm that was used to perform the classification.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>

```



```

</xsd:simpleType>
<xsd:complexType name="ClassificationData">
  <xsd:annotation>
    <xsd:documentation>Contains information on classification results and the algorithm used to determine the classification.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Classification" type="tns:Classification" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The result of the classification.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="ClassificationAlgorithmType" type="tns:ClassificationAlgorithmType" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Identifies the type of classification algorithm that was used to perform the classification.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="DocumentDataType">
  <xsd:annotation>
    <xsd:documentation>Defines a set of document data elements providing information about the presented identity document. </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="DocumentCategory" type="xsd:string" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The type of identity document presented (e.g. passport).</xsd:documentation>

```

```

    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentIDNumber" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The number associated with the identity document (e.g. passport number).</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentIssuanceCountryCode" type="iso_3166_1:CountryAlpha2CodeType" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The ISO 2-character code for the country which issued the document or from within which it was issued.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentIssuingOrganization" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The entity which issued the identity document.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentIssuanceDate" type="xsd:dateTime" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The date upon which the identity document was issued.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentExpirationDate" type="xsd:dateTime" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>The date upon which the identity document is no longer valid (expires).</xsd:documentation>
    </xsd:annotation>
  </xsd:element>

```

```

</xsd:element>

<xsd:element name="DocumentLastName" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The family name of the person to whom the identity document was issued, as contained within the document
  itself.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="DocumentFirstName" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The first given name of the person to whom the identity document was issued, as contained within the document
  itself.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="DocumentMiddleName" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The second given name of the person to whom the identity document was issued, as contained within the document
  itself.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="DocumentValidity" type="xsd:boolean" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The assessed validity of the identity document (e.g. as the result of local or online validity checks).</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="DocumentValidityText" type="xsd:string" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Details or remarks associated with the assessed validity (e.g. description of validity issue).</xsd:documentation>
  </xsd:annotation>

```

```

    </xsd:annotation>
  </xsd:element>
  <xsd:element name="DocumentImage" type="xsd:base64Binary" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>A scanned image of the subject document (e.g. passport picture page).</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="DocumentDataListType">
  <xsd:annotation>
    <xsd:documentation>Defines a list of documents. </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="DocumentData" type="tns:DocumentDataType" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>
        <xsd:documentation>Data structure containing information about a document and optionally an image of that document.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="EncounterCategoryType">
  <xsd:annotation>
    <xsd:documentation>Identifies the type of encounter (interaction) during which the identity (biographic, biometric, and/or document) data was collected from the
subject as determined by the requester.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string">

```

```

<xsd:enumeration value="Enrolment">
  <xsd:annotation>
    <xsd:documentation>The encounter is created during an enrolment interaction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Recognition">
  <xsd:annotation>
    <xsd:documentation>The encounter is created during a recognition interaction.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:enumeration value="Unspecified">
  <xsd:annotation>
    <xsd:documentation>The type of encounter is unknown.</xsd:documentation>
  </xsd:annotation>
</xsd:enumeration>
<xsd:pattern value="([a-zA-Z0-9])+"/>
</xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="EncounterListType">
  <xsd:annotation>
    <xsd:documentation>Defines a set of encounters.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="EncounterID" type="tns:BIASIDType" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>
        <xsd:documentation>The identifier of an encounter.</xsd:documentation>

```

```

        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FusionIdentityListType">
    <xsd:annotation>
        <xsd:documentation>
            Contains fusion input elements for one or more identities, utilizing the FusionInformationListType to represent a single set of fusion information for each identity.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="FusionIdentity" type="tns:FusionInformationListType" minOccurs="0" maxOccurs="unbounded">
            <xsd:annotation>
                <xsd:documentation>A set of fusion information for a single identity.</xsd:documentation>
            </xsd:annotation>
        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FusionInformationListType">
    <xsd:annotation>
        <xsd:documentation>
            Contains at a minimum two sets of fusion input
            elements, as input to the PerformFusion request.
        </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>

```

```

<xsd:element name="FusionElement" type="tns:FusionInformationType" minOccurs="2" maxOccurs="unbounded">
  <xsd:annotation>
    <xsd:documentation>A set of fusion information.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FusionInformationType">
  <xsd:annotation>
    <xsd:documentation>Represents the information necessary to perform a fusion operation.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BiometricType" type="cbeff:MultipleTypesType" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The type of biological or behavioral data stored in the biometric record, as defined by CBEFF.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="BiometricSubType" type="cbeff:SubtypeType" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>More specifically defines the type of biometric data stored in the biometric record.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="AlgorithmOwner" type="xsd:string" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The owner or vendor of the algorithm used to determine the score or decision.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

```

```

</xsd:element>

<xsd:element name="AlgorithmType" type="xsd:string" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The Algorithm Owner's identifier for the specific algorithm product and version used to determine the score or
decision.</xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="FusionResult" type="tns:FusionResult"/>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="FusionResult">
  <xsd:sequence/>
</xsd:complexType>

<xsd:complexType name="FusionScore">
  <xsd:complexContent>
    <xsd:extension base="tns:FusionResult">
      <xsd:sequence>
        <xsd:element name="Score" type="tns:ScoreType">
          <xsd:annotation>
            <xsd:documentation>The similarity score assigned by the matching algorithm.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>

```



```

<xsd:complexType name="FusionDecision">
  <xsd:complexContent>
    <xsd:extension base="tns:FusionResult">
      <xsd:sequence>
        <xsd:element name="Decision" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation>The match decision assigned by the matching algorithm.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
<xsd:complexType name="GenericRequestParameters">
  <xsd:annotation>
    <xsd:documentation>Common request parameters that can be used to identify the requester.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Application" type="tns:ApplicationIdentifier" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Identifies the requesting application.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="ApplicationUser" type="tns:ApplicationUserIdentifier" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Identifers the user or instance of the requesting application.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

```

```

    </xsd:annotation>
  </xsd:element>
  <xsd:element name="BIASOperationName" type="xsd:string" minOccurs="0" maxOccurs="1">
    <xsd:annotation>
      <xsd:documentation>Identifiers the BIAS operation name that is being requested.</xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="InformationType">
  <xsd:annotation>
    <xsd:documentation>
      Allows for an unlimited number of data element types, and it does
      not specify nor require any particular data element.
    </xsd:documentation>
  </xsd:annotation>
  <!-- THE FOLLOWING COMMENTED SECTION IS PROVIDED AS AN INFORMATIVE
  EXAMPLE OF WHAT 'InformationType'S CONTENT COULD BE -->
  <!-- xsd:sequence>
    <xsd:element name="GUID" type="xsd:string" minOccurs="0" />
    <xsd:element name="GivenName" type="xsd:string" minOccurs="0" />
    <xsd:element name="FamilyName" type="xsd:string" minOccurs="0" />
    <xsd:element name="DateOfBirth" type="xsd:string" minOccurs="0" />
    <xsd:element name="Sex" type="xsd:string" minOccurs="0" />
    <xsd:element name="Citizenship" type="xsd:string" minOccurs="0" />
    <xsd:element name="Images" minOccurs="0">

```

```

<xsd:complexType>
  <xsd:sequence>
    <xsd:element name="Image" minOccurs="0" maxOccurs="unbounded">
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element name="ContentType" type="xsd:string" minOccurs="0" />
          <xsd:element name="FingerPosition" type="xsd:string" minOccurs="0" />
          <xsd:element name="HandPosition" type="xsd:string" minOccurs="0" />
          <xsd:element name="ImageData" type="xsd:base64Binary" minOccurs="0" />
        </xsd:sequence>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="Identities" minOccurs="0">
  <xsd:complexType>
    <xsd:sequence>
      <xsd:element name="Identity" type="xsd:string" maxOccurs="unbounded" />
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
</xsd:sequence-->
</xsd:complexType>
<xsd:complexType name="ListFilterType">
  <xsd:annotation>

```

```

    <xsd:documentation>Provides a method to filter the amount of information returned in a search of biometric data.
  </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="BiometricTypeFilters">
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element name="BiometricTypeFilter" type="cbeff:MultipleTypesType" minOccurs="1" maxOccurs="unbounded">
            <xsd:annotation>
              <xsd:documentation>Limits the returned information to a specific type of biometric, as defined by CBEFF.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:complexType>
    </xsd:element>
    <xsd:element name="IncludeBiometricSubtype" type="xsd:boolean" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A Boolean flag indicating if biometric subtype information should be returned.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="MatchType">
  <xsd:annotation>
    <xsd:documentation>The result of a fusion method.</xsd:documentation>
  </xsd:annotation>

```

```

    <xsd:restriction base="xsd:boolean"/>
  </xsd:simpleType>
  <xsd:complexType name="OptionType">
    <xsd:annotation>
      <xsd:documentation>

```

BIAS aggregate operations support the ability to include various processing options which direct and possibly control the business logic for that operation. Together with the ProcessingOptionsType, The OptionType provides a method to represent those options. Processing options SHOULD be defined by the implementing system.

```

    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Key" type="xsd:string" >
      <xsd:annotation>
        <xsd:documentation>The identifier of an option supported by the implementing system.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Value" type="xsd:string" minOccurs="0" >
      <xsd:annotation>
        <xsd:documentation>The value for an option supported by the implementing system.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ProcessingOptionsType">
  <xsd:annotation>
    <xsd:documentation>

```

BIAS aggregate services support the ability to include various

processing options which direct and possibly control the business logic for that service. The ProcessingOptionsType provides a method to represent those options. Processing options should be defined by the implementing system.

```
</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="Option" type="tns:OptionType" minOccurs="0" maxOccurs="unbounded">
      <xsd:annotation>
        <xsd:documentation>An option supported by the implementing system.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="ProductID">
  <xsd:annotation>
    <xsd:documentation>The vendor's ID for a particular product.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:string"/>
</xsd:simpleType>
<xsd:complexType name="QualityData">
  <xsd:annotation>
    <xsd:documentation>Contains information about a biometric sample's quality and the algorithm used to compute the quality.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="QualityScore" type="cbeff:QualityType" minOccurs="0" maxOccurs="1">
```

```

<xsd:annotation>
  <xsd:documentation>The quality of a biometric sample.</xsd:documentation>
</xsd:annotation>
</xsd:element>
<xsd:element name="AlgorithmVendor" type="tns:VendorIdentifier" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The vendor of the quality algorithm used to determine the quality score.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="AlgorithmVendorProductID" type="tns:ProductID" minOccurs="1" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The vendor's ID for the algorithm used to determine the quality.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
<xsd:element name="AlgorithmVersion" type="tns:VersionType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The version of the algorithm used to determine the quality.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="RequestTemplate">
  <xsd:annotation>
    <xsd:documentation>Base template for BIAS primitive service requests.</xsd:documentation>
  </xsd:annotation>
</xsd:sequence>

```

```

    <xsd:element name="GenericRequestParameters" type="tns:GenericRequestParameters" minOccurs="0" maxOccurs="1"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="ResponseStatus">
  <xsd:sequence>
    <xsd:element name="Return" type="tns:ReturnCode" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>The return code indicates the return status of the operation.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Message" type="xsd:string" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A short message corresponding to the return code.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="ResponseTemplate">
  <xsd:annotation>
    <xsd:documentation>Base template for BIAS responses.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ResponseStatus" type="tns:ResponseStatus" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Returned status for the operation.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>

```



```

    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="ReturnCode">
  <xsd:annotation>
    <xsd:documentation>BIAS Operation Return Codes</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:unsignedLong">
    <xsd:enumeration value="0">
      <xsd:annotation>
        <xsd:documentation>Success</xsd:documentation>
      </xsd:annotation>
    </xsd:enumeration>
  </xsd:restriction>
</xsd:simpleType>
<!--<xsd:simpleType name="Score">
  <xsd:annotation>
    <xsd:documentation>Match result or quality score.</xsd:documentation>
  </xsd:annotation>
  <xsd:restriction base="xsd:float"/>
</xsd:simpleType-->
<xsd:complexType name="ScoreType">
  <xsd:annotation>
    <xsd:documentation>Match result or quality score.</xsd:documentation>
  </xsd:annotation>
</xsd:sequence>

```

```

<xsd:element name="Value" type="xsd:float"/>
<xsd:element name="BiometricType" type="cbeff:MultipleTypesType" minOccurs="0"/>
<xsd:element name="BiometricSubType" type="cbeff:SubtypeType" minOccurs="0"/>
</xsd:sequence>
</xsd:complexType>
<xsd:complexType name="TokenType">
  <xsd:annotation>
    <xsd:documentation>Defines a token that is returned for asynchronous processing.</xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="TokenValue" type="xsd:string" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A value returned by the implementing system that is used to retrieve the results to a service at a later time.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Expiration" type="xsd:date" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A date and time at which point the token expires and the service results are no longer guaranteed to be
available.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
<xsd:simpleType name="VendorIdentifier">
  <xsd:annotation>
    <xsd:documentation>Identifies a vendor.</xsd:documentation>
  </xsd:annotation>

```

```
<xsd:restriction base="xsd:string"/>
```

```
</xsd:simpleType>
```

```
<xsd:complexType name="Version">
```

```
<xsd:annotation>
```

```
<xsd:documentation>
```

For a description or definition of each data element, see the

referenced CBEFF standards in the CBEFF\_XML\_BIR\_Type schema.

```
</xsd:documentation>
```

```
</xsd:annotation>
```

```
<xsd:sequence>
```

```
<xsd:element name="major" type="xsd:nonNegativeInteger" minOccurs="1" maxOccurs="1"/>
```

```
<xsd:element name="minor" type="xsd:nonNegativeInteger" minOccurs="1" maxOccurs="1"/>
```

```
</xsd:sequence>
```

```
</xsd:complexType>
```

```
<xsd:simpleType name="VersionType">
```

```
<xsd:annotation>
```

```
<xsd:documentation>The version of a component.</xsd:documentation>
```

```
</xsd:annotation>
```

```
<xsd:restriction base="xsd:string"/>
```

```
</xsd:simpleType>
```

```
<xsd:element name="AddSubjectToGallery">
```

```
<xsd:complexType>
```

```
<xsd:annotation>
```

```
<xsd:documentation>
```

Register a subject to a given gallery or population group.

```
</xsd:documentation>
```

```

</xsd:annotation>

<xsd:sequence>

  <xsd:element name="AddSubjectToGalleryRequest" nillable="true">

    <xsd:complexType>

      <xsd:complexContent>

        <xsd:extension base="tns:RequestTemplate">

          <xsd:sequence>

            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>The identifier of the gallery or population group to which the subject will be added.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>The identity to add to the gallery.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

          </xsd:sequence>

        </xsd:extension>

      </xsd:complexContent>

    </xsd:complexType>

  </xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="AddSubjectToGalleryResponse">

```

```

<xsd:complexType>
  <xsd:annotation>
    <xsd:documentation>
      The response to an AddSubjectToGallery request.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="AddSubjectToGalleryResponsePackage" nillable="true">
      <xsd:complexType>
        <xsd:complexContent>
          <xsd:extension base="tns:ResponseTemplate"/>
        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="CheckQuality">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Calculate a quality score for a given biometric.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="CheckQualityRequest" nillable="true">

```

```

<xsd:complexType>
  <xsd:complexContent>
    <xsd:extension base="tns:RequestTemplate">
      <xsd:sequence>
        <xsd:element name="BiometricData" type="tns:BIASBiometricDataType" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Data structure containing a single biometric sample for which a quality score is to be determined; required if no
SubjectID is provided.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Data structure containing a Subject ID associated with a single biometric sample for which a quality score is to be
determined; required if no BIR is provided.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="QualityInfo" type="tns:QualityData" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Specifies a particular algorithm vendor and vender product ID.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>

```

```

</xsd:complexType>
</xsd:element>
<xsd:element name="CheckQualityResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a CheckQuality request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="CheckQualityResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="QualityInfo" type="tns:QualityData" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Contains the quality information for the submitted biometric sample.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:sequence>

```

```

</xsd:complexType>
</xsd:element>
<xsd:element name="ClassifyBiometricData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Classifies a biometric sample.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="ClassifyBiometricDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="BiometricData" type="tns:BIASBiometricDataType" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Data structure containing a single biometric sample for which the classification is to be
determined.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="ClassificationData" type="tns:ClassificationData" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Contains the algorithm to be used to determine the classification.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```



```

        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ClassifyBiometricDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a ClassifyBiometricData request, containing
        the classification of a biometric sample.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="ClassifyBiometricDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="ClassificationData" type="tns:ClassificationData" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Information on the results and type of classification performed.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="CreateEncounter">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Create a new encounter record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="CreateEncounterRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

<xsd:element name="CreateEncounterResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a CreateEncounter request, containing the encounter
        ID of the new encounter record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="CreateEncounterResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Contains the encounter ID of the new encounter record.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```

```

</xsd:element>

<xsd:element name="CreateSubject">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Create a new subject record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="CreateSubjectRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

<xsd:element name="CreateSubjectResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a CreateSubject request, containing the subject
        ID of the new subject record.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>
</xsd:element>

```

```

</xsd:annotation>

<xsd:sequence>

  <xsd:element name="CreateSubjectResponsePackage" nillable="true">

    <xsd:complexType>

      <xsd:complexContent>

        <xsd:extension base="tns:ResponseTemplate">

          <xsd:sequence>

            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>Contains the subject ID of the new subject record.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

          </xsd:sequence>

        </xsd:extension>

      </xsd:complexContent>

    </xsd:complexType>

  </xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="DeleteBiographicData">

  <xsd:complexType>

    <xsd:annotation>

      <xsd:documentation>

        Erase all of the biographic data associated with a given

        subject record or, in the encounter-centric model, with a

```

```

        given encounter.
    </xsd:documentation>
</xsd:annotation>
<xsd:sequence>
    <xsd:element name="DeleteBiographicDataRequest" nillable="true">
        <xsd:complexType>
            <xsd:complexContent>
                <xsd:extension base="tns:RequestTemplate">
                    <xsd:sequence>
                        <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                            <xsd:annotation>
                                <xsd:documentation>Contains either the subject ID or encounter ID reference.</xsd:documentation>
                            </xsd:annotation>
                        </xsd:element>
                        <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
                            <xsd:annotation>
                                <xsd:documentation>The identifier of the gallery or population group from which the biographic information will be
deleted.</xsd:documentation>
                            </xsd:annotation>
                        </xsd:element>
                    </xsd:sequence>
                </xsd:extension>
            </xsd:complexContent>
        </xsd:complexType>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>

```

```

</xsd:element>
<xsd:element name="DeleteBiographicDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a DeleteBiographicData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="DeleteBiographicDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DeleteBiometricData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Erase all of the biometric data associated with a given
        subject record or, in the encounter-centric model, with a
        given encounter.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>
</xsd:element>

```

```

</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="DeleteBiometricDataRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Contains either the subject ID or encounter ID reference.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="BiometricType" type="cbeff:MultipleTypesType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The type of biological or behavioral data to delete, as defined by CBEFF.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The identifier of the gallery or population group from which the biometric information will be
deleted.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>

```



```

        </xsd:complexType>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteBiometricDataResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a DeleteBiometricData request.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="DeleteBiometricDataResponsePackage" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:ResponseTemplate"/>
                    </xsd:complexContent>
                </xsd:complexType>
            </xsd:element>
        </xsd:sequence>
    </xsd:complexType>
</xsd:element>
<xsd:element name="DeleteDocumentData">
    <xsd:complexType>
        <xsd:annotation>

```

```

        <xsd:documentation>Erase all of the document data associated with a given subject record or, in the encounter-centric model, with a given
encounter.</xsd:documentation>

    </xsd:annotation>
</xsd:sequence>

<xsd:element name="DeleteDocumentDataRequest" nillable="true">
    <xsd:complexType>
        <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
                <xsd:sequence>
                    <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                        <xsd:annotation>
                            <xsd:documentation>Contains either the subject ID or encounter ID reference.</xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
                    <xsd:element name="DocumentData" type="tns:DocumentDataType" minOccurs="0" maxOccurs="1">
                        <xsd:annotation>
                            <xsd:documentation>Defines a set of document data elements providing information about the presented identity document.
</xsd:documentation>
                        </xsd:annotation>
                    </xsd:element>
                </xsd:sequence>
            </xsd:extension>
        </xsd:complexContent>
    </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>

```

```

</xsd:element>
<xsd:element name="DeleteDocumentDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a DeleteDocumentData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="DeleteDocumentDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="DeleteEncounter">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Delete an existing encounter record from the system.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>

```

```

<xsd:sequence>
  <xsd:element name="DeleteEncounterRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Subject ID and encounter ID of the identity to delete.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteEncounterResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a DeleteEncounter request.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>

```

```

<xsd:sequence>
  <xsd:element name="DeleteEncounterResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:ResponseTemplate"/>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteSubject">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Delete an existing subject record and, in an encounter-centric
        model, any associated encounter information.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="DeleteSubjectRequest" nillable="true">
      <xsd:complexType>
        <xsd:complexContent>
          <xsd:extension base="tns:RequestTemplate">
            <xsd:sequence>
              <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

```

```

        <xsd:annotation>
            <xsd:documentation>Subject ID of the identity to delete.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteSubjectResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a DeleteSubject request.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="DeleteSubjectResponsePackage" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:ResponseTemplate"/>
                    </xsd:complexContent>
                </xsd:complexType>
            </xsd:element>
        </xsd:sequence>
    </xsd:complexType>

```

```

        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteSubjectFromGallery">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                Remove the registration of a subject from a gallery or
                population group.
            </xsd:documentation>
        </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="DeleteSubjectFromGalleryRequest" nillable="true">
            <xsd:complexType>
                <xsd:complexContent>
                    <xsd:extension base="tns:RequestTemplate">
                        <xsd:sequence>
                            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="1" maxOccurs="1">
                                <xsd:annotation>
                                    <xsd:documentation>The identifier of the gallery or population group from which the subject will be deleted.</xsd:documentation>
                                </xsd:annotation>
                            </xsd:element>
                            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                                <xsd:annotation>
                                    <xsd:documentation>The identity to remove from the gallery.</xsd:documentation>
                                </xsd:annotation>
                            </xsd:element>
                        </xsd:sequence>
                    </xsd:extension>
                </xsd:complexContent>
            </xsd:complexType>
        </xsd:element>
    </xsd:sequence>

```

```

        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteSubjectFromGalleryResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a DeleteSubjectFromGallery request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="DeleteSubjectFromGalleryResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```



```

</xsd:complexType>
</xsd:element>
<xsd:element name="GetIdentifySubjectResults">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Retrieve the identification results for a specified token,
        which was returned by the Identify Subject service.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="GetIdentifySubjectResultsRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>A value used to retrieve the results of an IdentifySubject request.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```

```

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="GetIdentifySubjectResultsResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a GetIdentifySubjectResults request, which includes a candidate list.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="GetIdentifySubjectResultsResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="CandidateList" type="tns:CandidateListType" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>A rank-ordered list of candidates that have a likelihood of matching the input biometric sample.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```

```

    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="IdentifySubject">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Perform an identification search against a given gallery for
        a given biometric.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="IdentifySubjectRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>The identifier of the gallery or population group which will be searched. Must not be used in conjunction with Gallery
parameter</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="Gallery" type="tns:CandidateListType" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>A list of BIRs to be used instead of a stored gallery. Must not be used in conjunction with GalleryID
parameter.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

        </xsd:annotation>
    </xsd:element>
    <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
            <xsd:documentation>Contains the BIR, a data structure containing the biometric sample for the search.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="MaxListSize" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
            <xsd:documentation>The maximum size of the candidate list that should be returned.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="IdentifySubjectResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to an IdentifySubject request, returning a
                rank-ordered candidate list.
            </xsd:documentation>
        </xsd:annotation>
    </xsd:complexType>

```

```

</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="IdentifySubjectResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:ResponseTemplate">
          <xsd:sequence>
            <xsd:element name="IdentifySubjectResult" type="tns:IdentifySubjectResultType"/>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:complexType name="IdentifySubjectResultType">
  <xsd:sequence/>
</xsd:complexType>
<xsd:complexType name="CandidateListResultType">
  <xsd:complexContent>
    <xsd:extension base="tns:IdentifySubjectResultType">
      <xsd:sequence>
        <xsd:element name="CandidateList" type="tns:CandidateListType" minOccurs="0" maxOccurs="1">
          <xsd:annotation>

```

<xsd:documentation>A rank-ordered list of candidates that have a likelihood of matching the input biometric sample; returned with successful synchronous request processing.</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

<xsd:complexType name="TokenResultType">

<xsd:complexContent>

<xsd:extension base="tns:IdentifySubjectResultType">

<xsd:sequence>

<xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>A token used to retrieve the results of the IdentifySubject request; returned with asynchronous request processing.</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

<xsd:element name="ListBiographicData">

<xsd:complexType>

<xsd:annotation>

<xsd:documentation>

Lists the biographic data elements stored for a subject.

```

</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="ListBiographicDataRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Identifies the category of encounter. If an encounter ID is not specified
                  and encounter data exists for the subject, the operation returns the list of encounter IDs of a specific
                  type which contain biographic data using the Encounter List output parameter, and the Biographic
                  Data Elements output parameter is empty. Should not be used in conjunction with EncounterID.
                </xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>

```

```

        </xsd:element>
    </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ListBiographicDataResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a ListBiographicData request, containing a list
                of biographic data elements stored for a subject. In the
                encounter-centric model, the biographic data elements for a
                specific encounter are returned. If an encounter ID is not
                specified and encounter data exists for the subject, the list
                of encounter IDs which contain biographic data is returned.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="ListBiographicDataResponsePackage" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:ResponseTemplate">
                            <xsd:sequence>
                                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
                                    <xsd:annotation>
                                        <xsd:documentation>
                                            Contains a list of biographic data elements associated with a

```



subject or encounter; non-empty if the service was successful, biographic data exists, and either (a) the person-centric model is being used or (b) the encounter-centric model is being used and an encounter identifier was specified.

</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

</xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="ListBiometricData">

<xsd:complexType>

<xsd:annotation>

<xsd:documentation>

Lists the biometric data elements stored for a subject. Note that no actual biometric data is returned by this service (see the RetrieveBiometricData service to obtain the biometric data).

</xsd:documentation>

</xsd:annotation>

```

<xsd:sequence>
  <xsd:element name="ListBiometricDataRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Identifies the category of encounter. If an encounter ID is not specified and
                  encounter data exists for the subject, the operation may return the list of encounter IDs of a specific
                  type which contain biometric data using the Encounter List output parameter, and the Biometric Data
                  List output parameter is empty. Should not be used in conjunction with EncounterID.
                </xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="ListFilter" type="tns:ListFilterType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Indicates what biometric information should be returned.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>

```

```

        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ListBiometricDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a ListBiometricData request, containing a list
        of biometric data elements stored for a subject. In the
        encounter-centric model, the biometric data elements for a
        specific encounter are returned. If an encounter ID is not
        specified and encounter data exists for the subject, the list
        of encounter IDs which contain biometric data is returned.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="ListBiometricDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity">

```

```

    <xsd:annotation>
      <xsd:documentation>
        Includes a list of biometric data elements associated
        with a subject or encounter or a list of encounter ID's
        associated with a subject and which contain biometric
        data.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ListDocumentData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Lists the document categories stored for a subject.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ListDocumentDataRequest" nillable="true">

```

```

<xsd:complexType>
  <xsd:complexContent>
    <xsd:extension base="tns:RequestTemplate">
      <xsd:sequence>
        <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Identifies the category of encounter. If an encounter ID is not specified and encounter data exists for the
subject, the operation shall return the list of encounter IDs which contain document data using the Encounter List Output parameter,
and the Document Data Elements output parameter shall be empty. Should not be used in conjunction with EncounterID.
            </xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="ListDocumentDataResponse">

```

```

<xsd:complexType>
  <xsd:annotation>
    <xsd:documentation>
      The response to a ListDocumentData request, containing a list of document categories stored for a subject.
      In the encounter-centric model, an encounterID may be specified to indicate that only document data categories
      stored for that encounter should be returned. If an encounter ID is not
      specified and encounter data exists for the subject, the list
      of encounter IDs which contain document data is returned.
    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="ListDocumentDataResponsePackage" nillable="true">
      <xsd:complexType>
        <xsd:complexContent>
          <xsd:extension base="tns:ResponseTemplate">
            <xsd:sequence>
              <xsd:element name="DocumentDataList" type="tns:DocumentDataListType" minOccurs="0" maxOccurs="1">
                <xsd:annotation>
                  <xsd:documentation>
                    A list of document categories associated with a subject or encounter; non-empty if the service
                    was successful, document data exists, and either the person-centric model is being used or the
                    encounter-centric model is being used and an encounter identifier was specified.
                  </xsd:documentation>
                </xsd:annotation>
              </xsd:element>
              <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">

```

```

<xsd:annotation>
  <xsd:documentation>
    A list of encounter IDs associated with a subject and which contain document data; non-empty
    if the service was successful, document data exists, the encounter-centric model is being used,
    and an encounter identifier was not specified..
  </xsd:documentation>
</xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="PerformFusion">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Accepts either match score or match decision information and creates a fused match result.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="PerformFusionRequest" nillable="true">
      <xsd:complexType>

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```

<xsd:complexContent>
  <xsd:extension base="tns:RequestTemplate">
    <xsd:sequence>
      <xsd:element name="FusionInput" type="tns:FusionIdentityListType" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>Score or decision input information to the fusion method for each identity.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="PerformFusionResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to the PerformFusion request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="PerformFusionResponsePackage" nillable="true">
        <xsd:complexType>

```



```

<xsd:complexContent>
  <xsd:extension base="tns:ResponseTemplate">
    <xsd:sequence>
      <xsd:element name="Match" type="tns:MatchType" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>Indicates the result of the fusion method</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="QueryCapabilities">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Returns a list of the capabilities, options, galleries, etc.
        that are supported by the BIAS implementation.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="QueryCapabilitiesRequest" nillable="true">

```

```

    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate"/>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="QueryCapabilitiesResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a QueryCapabilities request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="QueryCapabilitiesResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="CapabilityList" type="tns:CapabilityListType" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>A list of capabilities supported by the BIAS implementation.</xsd:documentation>
                  </xsd:annotation>
                
```

```

        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveBiographicData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Retrieves the biographic data associated with a subject ID.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="RetrieveBiographicDataRequest" nillable="true">
      <xsd:complexType>
        <xsd:complexContent>
          <xsd:extension base="tns:RequestTemplate">
            <xsd:sequence>
              <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                <xsd:annotation>
                  <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter.</xsd:documentation>
                </xsd:annotation>
              </xsd:element>
            </xsd:sequence>
          </xsd:extension>
        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>

```

```

</xsd:element>

<xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>Identifies the type of encounter during which data was collected from the subject,
    as determined by the requester.
    </xsd:documentation>
  </xsd:annotation>
</xsd:element>

<xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
  <xsd:annotation>
    <xsd:documentation>The identifier of the gallery or population group from which the biographic information will be
retrieved.</xsd:documentation>
  </xsd:annotation>
</xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveBiographicDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a RetrieveBiographicData request,

```

containing the biographic data associated with a subject ID. In the encounter-centric model, the biographic data associated with a specified encounter is returned. If the encounter ID is not specified in the encounter-centric model, the biographic information associated with the most recent encounter is returned.

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element name="RetrieveBiographicDataResponsePackage" nillable="true">

<xsd:complexType>

<xsd:complexContent>

<xsd:extension base="tns:ResponseTemplate">

<xsd:sequence>

<xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>Includes the set of biographic data associated with a subject.</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

</xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

```

<xsd:element name="RetrieveBiometricData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Retrieves the biometric data associated with a subject ID.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="RetrieveBiometricDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Identifies the type of encounter during which data was collected from the subject,
                    as determined by the requester.
                  </xsd:documentation>
                </xsd:annotation>
              </xsd:sequence>
            </xsd:element>
            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

```

```

        <xsd:annotation>
            <xsd:documentation>The identifier of the gallery or population group from which the biometric information will be
retrieved.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="BiometricType" type="cbeff:MultipleTypesType" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
            <xsd:documentation>The type of biological or behavioral data to retrieve.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveBiometricDataResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a RetrieveBiometricData request,
                containing the biometric data associated with a subject ID. In
                the encounter-centric model, the biometric data associated with
                a specified encounter is returned. If the encounter ID is not
                specified in the encounter-centric model, the biometric

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information associated with the most recent encounter is returned.

</xsd:documentation>

</xsd:annotation>

<xsd:sequence>

<xsd:element name="RetrieveBiometricDataResponsePackage" nillable="true">

<xsd:complexType>

<xsd:complexContent>

<xsd:extension base="tns:ResponseTemplate">

<xsd:sequence>

<xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

<xsd:annotation>

<xsd:documentation>Includes the biometric data associated with a subject.</xsd:documentation>

</xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

</xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="RetrieveDocumentData">

<xsd:complexType>

<xsd:annotation>

<xsd:documentation>Retrieves the list of document data associated with a subject ID for the category(ies) specified. </xsd:documentation>



```

</xsd:annotation>

<xsd:sequence>

  <xsd:element name="RetrieveDocumentDataRequest" nillable="true">

    <xsd:complexType>

      <xsd:complexContent>

        <xsd:extension base="tns:RequestTemplate">

          <xsd:sequence>

            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>Contains either the subject ID or encounter ID reference.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

            <xsd:element name="DocumentData" type="tns:DocumentDataType" minOccurs="0" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>Defines a set of document data elements providing information about the requested identity document.

</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

            <xsd:element name="EncounterType" type="tns:EncounterCategoryType" minOccurs="0" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>Identifies the category of encounter.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>The identifier of the gallery or population group from which the biographic information will be retrieved.

</xsd:documentation>

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        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveDocumentDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a RetrieveDocumentData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="RetrieveDocumentDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
      <xsd:element name="DocumentDataList" type="tns:DocumentDataListType" minOccurs="1" maxOccurs="1">

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```

        <xsd:annotation>
            <xsd:documentation>A list of document data associated with a subject or encounter</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="SetBiographicData">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                Associates biographic data to a given subject record.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="SetBiographicDataRequest" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:RequestTemplate">
                            <xsd:sequence>
                                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                                    <xsd:annotation>
                                        <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biographic data
to store.</xsd:documentation>
                                    </xsd:annotation>
                                </xsd:element>
                                <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">

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        <xsd:annotation>
            <xsd:documentation>The identifier of the gallery or population group to which the biographic will be added.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="SetBiographicDataResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a SetBiographicData request.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="SetBiographicDataResponsePackage" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:ResponseTemplate">
                            <xsd:sequence>
                                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">

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```

        <xsd:annotation>
            <xsd:documentation>In an encounter-centric model, identifies the encounter ID assigned to a new encounter.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="SetBiometricData">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                Associates biometric data to a given subject record.
            </xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="SetBiometricDataRequest" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:RequestTemplate">
                            <xsd:sequence>
                                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">

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```

        <xsd:annotation>
            <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biometric data to
store.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
    <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
            <xsd:documentation>The identifier of the gallery or population group to which the biometric will be added.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="SetBiometricDataResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a SetBiometricData request.
            </xsd:documentation>
        </xsd:annotation>
    <xsd:sequence>
        <xsd:element name="SetBiometricDataResponsePackage" nillable="true">

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```

<xsd:complexType>
  <xsd:complexContent>
    <xsd:extension base="tns:ResponseTemplate">
      <xsd:sequence>
        <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>In an encounter-centric model, identifies the encounter ID assigned to a new encounter.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="SetDocumentData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Associates document data to a given subject record.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="SetDocumentDataRequest" nillable="true">

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<xsd:complexType>
  <xsd:complexContent>
    <xsd:extension base="tns:RequestTemplate">
      <xsd:sequence>
        <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the document data
to store.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>The identifier of the gallery or population group to which the document data will be added.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="DocumentDataList" type="tns:DocumentDataListType" minOccurs="1" maxOccurs="1">
          <xsd:annotation>
            <xsd:documentation>Defines a set of document data elements to associate with the subject or encounter. </xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>

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```

</xsd:element>
<xsd:element name="SetDocumentDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a SetDocumentData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="SetDocumentDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>In an encounter-centric model, identifies the encounter ID assigned to a new encounter.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

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```

</xsd:element>
<xsd:element name="TransformBiometricData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Transforms or processes a given biometric in one format into a new target format.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="TransformBiometricDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="InputBIR" type="tns:CBEFF_BIR_Type" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Data structure containing the biometric information to be transformed.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="TransformOperation" type="xsd:unsignedLong" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Value indicating the type of transformation to perform.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="TransformControl" type="xsd:string" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>

```

```

        <xsd:documentation> Specifies controls for the requested transform operation.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="TransformBiometricDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to a TransformBiometricData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="TransformBiometricDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate">
              <xsd:sequence>
                <xsd:element name="OutputBIR" type="tns:CBEFF_BIR_Type" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>

```

```

        <xsd:documentation>Data structure containing the new, transformed biometric information.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="UpdateBiographicData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Updates the biographic data for a given subject record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateBiographicDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>

```

<xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biographic data to update.</xsd:documentation>

```

        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="UpdateBiographicDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to an UpdateBiographicData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateBiographicDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```

```

    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="UpdateBiometricData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Updates a single biometric sample for a given subject record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateBiometricDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the biometric data to
update.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="Merge" type="xsd:boolean" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Value indicating if the input biometric sample should be merged with any existing biometric
information.</xsd:documentation>
                  </xsd:annotation>

```

```

        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="UpdateBiometricDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to an UpdateBiometricData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateBiometricDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>

```

```

</xsd:element>
<xsd:element name="UpdateDocumentData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        Updates the document data for a given subject record.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateDocumentDataRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:RequestTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Identifies the subject or, in the encounter-centric model, a subject and an encounter, and includes the document data
to update.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="DocumentDataList" type="tns:DocumentDataListType" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>Defines a set of updated document data elements to associate with the subject or encounter. </xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```



```

        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="UpdateDocumentDataResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The response to an UpdateDocumentData request.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateDocumentDataResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:ResponseTemplate"/>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>
<xsd:element name="VerifySubject">
  <xsd:complexType>

```

```

<xsd:annotation>
  <xsd:documentation>
    Performs a 1:1 verification match between a given biometric and
    either a claim to identity in a given gallery or another given
    biometric.
  </xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="VerifySubjectRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The identifier of the gallery or population group of which the subject must be a member.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Includes the identifying information and/or input and reference biometric samples.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexType>

```

```

        </xsd:complexType>
    </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="VerifySubjectResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>
                The response to a VerifySubject request.
            </xsd:documentation>
        </xsd:annotation>
    </xsd:sequence>
    <xsd:element name="VerifySubjectResponsePackage" nillable="true">
        <xsd:complexType>
            <xsd:complexContent>
                <xsd:extension base="tns:ResponseTemplate">
                    <xsd:sequence>
                        <xsd:element name="Match" type="xsd:boolean" minOccurs="1" maxOccurs="1">
                            <xsd:annotation>
                                <xsd:documentation>Indicates if the Input BIR matched either the biometric information associated with the Identity Claim or the Reference
BIR.</xsd:documentation>
                            </xsd:annotation>
                        </xsd:element>
                        <xsd:element name="Score" type="tns:ScoreType" minOccurs="0" maxOccurs="1">
                            <xsd:annotation>
                                <xsd:documentation>The score if the biometric information matched.</xsd:documentation>

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```

        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="Delete">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The Delete operation deletes an existing subject or, in an encounter-centric model, an existing encounter from the
        system.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="DeleteRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:AggregateRequestTemplate">
              <xsd:sequence>

                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">

```

```

        <xsd:annotation>
            <xsd:documentation>The identifier for the subject, or in encounter-centric model the encounter to be
            deleted; required for encounter-centric models.</xsd:documentation>
        </xsd:annotation>
    </xsd:element>
</xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="DeleteResponse">
    <xsd:complexType>
        <xsd:annotation>
            <xsd:documentation>The response to an Delete request.</xsd:documentation>
        </xsd:annotation>
        <xsd:sequence>
            <xsd:element name="DeleteResponsePackage" nillable="true">
                <xsd:complexType>
                    <xsd:complexContent>
                        <xsd:extension base="tns:AggregateResponseTemplate">
                            <xsd:sequence>
                                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                                    <xsd:annotation>

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```

        <xsd:documentation>The identifier for the subject, or in encounter-centric model, the encounter being deleted;
        required for encounter-centric models.</xsd:documentation>

    </xsd:annotation>

</xsd:element>

<xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">

    <xsd:annotation>

        <xsd:documentation>A value used to retrieve the results of the Delete request.</xsd:documentation>

    </xsd:annotation>

</xsd:element>

</xsd:sequence>

</xsd:extension>

</xsd:complexContent>

</xsd:complexType>

</xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="Enroll">

    <xsd:complexType>

        <xsd:annotation>

            <xsd:documentation>

                The Enroll aggregate service adds a new subject or, in an

                encounter-centric model, a new encounter to the system.

            </xsd:documentation>

        </xsd:annotation>

    </xsd:sequence>

```

```

<xsd:element name="EnrollRequest" nillable="true">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="tns:AggregateRequestTemplate">
        <xsd:sequence>
          <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>The identifier for the encounter; required for encounter-centric models.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="EnrollResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to an Enroll request.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="EnrollResponsePackage" nillable="true">
        <xsd:complexType>

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```

<xsd:complexContent>
  <xsd:extension base="tns:AggregateResponseTemplate">
    <xsd:sequence>
      <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>The identifier for the encounter; required for encounter-centric models.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>A value used to retrieve the results of the Enroll request.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetDeletionResults">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The GetDeletionResults operation retrieves the deletion results for the specified token.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>
</xsd:element>

```



```

    </xsd:documentation>
  </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="GetDeletionResultsRequest" nillable="true">
      <xsd:complexType>
        <xsd:complexContent>
          <xsd:extension base="tns:RequestTemplate">
            <xsd:sequence>
              <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">
                <xsd:annotation>
                  <xsd:documentation>A value used to retrieve the results of the Deletion request.</xsd:documentation>
                </xsd:annotation>
              </xsd:element>
            </xsd:sequence>
          </xsd:extension>
        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetDeletionResultsResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to a GetDeletionResults request.</xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>

```

```

<xsd:sequence>
  <xsd:element name="GetDeletionResultsResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:ResponseTemplate">
          <xsd:sequence>
            <xsd:element name="ReturnData" type="tns:InformationType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Contains the output data for the response.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetEnrollResults">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The GetEnrollResults aggregate service retrieves the enrollment
        results for the specified token.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>
</xsd:element>

```

```

</xsd:annotation>

<xsd:sequence>

  <xsd:element name="GetEnrollResultsRequest" nillable="true">

    <xsd:complexType>

      <xsd:complexContent>

        <xsd:extension base="tns:RequestTemplate">

          <xsd:sequence>

            <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>A value used to retrieve the results of the Enroll request.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

          </xsd:sequence>

        </xsd:extension>

      </xsd:complexContent>

    </xsd:complexType>

  </xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="GetEnrollResultsResponse">

  <xsd:complexType>

    <xsd:annotation>

      <xsd:documentation>The response to a GetEnrollResults request.</xsd:documentation>

    </xsd:annotation>

```

```

<xsd:sequence>
  <xsd:element name="GetEnrollResultsResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:AggregateResponseTemplate">
          <xsd:sequence>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The identifier for the subject, and in encounter-centric models, the encounter.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetIdentifyResults">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The GetIdentifyResults aggregate service retrieves the
        identification results for the specified token.
      </xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>
</xsd:element>

```

```

</xsd:annotation>

<xsd:sequence>

  <xsd:element name="GetIdentifyResultsRequest" nillable="true">

    <xsd:complexType>

      <xsd:complexContent>

        <xsd:extension base="tns:RequestTemplate">

          <xsd:sequence>

            <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">

              <xsd:annotation>

                <xsd:documentation>A value used to retrieve the results of the Identify request.</xsd:documentation>

              </xsd:annotation>

            </xsd:element>

          </xsd:sequence>

        </xsd:extension>

      </xsd:complexContent>

    </xsd:complexType>

  </xsd:element>

</xsd:sequence>

</xsd:complexType>

</xsd:element>

<xsd:element name="GetIdentifyResultsResponse">

  <xsd:complexType>

    <xsd:annotation>

      <xsd:documentation>The response to a GetIdentifyResults request.</xsd:documentation>

    </xsd:annotation>

  <xsd:sequence>

```

```

<xsd:element name="GetIdentifyResultsResponsePackage" nillable="true">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="tns:AggregateResponseTemplate">
        <xsd:sequence>
          <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>The identifier of the encounter, if assigned.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
          <xsd:element name="CandidateList" type="tns:CandidateListType" minOccurs="0" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>A rank-ordered list of candidates that have a likelihood of matching the
                input biometric sample.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetUpdateResults">
  <xsd:complexType>

```

```

<xsd:annotation>
  <xsd:documentation>
    The GetUpdateResults operation retrieves the update results for the specified token.
  </xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="GetUpdateResultsRequest" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:RequestTemplate">
          <xsd:sequence>
            <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>A value used to retrieve the results of the Update request.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
          </xsd:sequence>
        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetUpdateResultsResponse">
  <xsd:complexType>

```

```

<xsd:annotation>
  <xsd:documentation>The response to a GetUpdateResults request.</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="GetUpdateResultsResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:AggregateResponseTemplate">
          <xsd:sequence>
            </xsd:sequence>
          </xsd:extension>
        </xsd:complexContent>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetVerifyResults">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The GetVerifyResults aggregate service retrieves the verification
        results for the specified token.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>

```



```

<xsd:element name="GetVerifyResultsRequest" nillable="true">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="tns:RequestTemplate">
        <xsd:sequence>
          <xsd:element name="Token" type="tns:TokenType" minOccurs="1" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>A value used to retrieve the results of the Verify request.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="GetVerifyResultsResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to a GetVerifyResults request.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="GetVerifyResultsResponsePackage" nillable="true">
        <xsd:complexType>

```

```

<xsd:complexContent>
  <xsd:extension base="tns:AggregateResponseTemplate">
    <xsd:sequence>
      <xsd:element name="Match" type="xsd:boolean" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>Indicates if the Input BIR matched either the biometric information
            associated with the Identity Claim or the Reference BIR.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <xsd:element name="Score" type="tns:ScoreType" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>The score if the biometric information matched.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>The identifier of the encounter, if assigned.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>

```

```

</xsd:element>
<xsd:element name="Identify">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The Identify aggregate service performs an identification
        function according to system requirements and/or resources.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="IdentifyRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:AggregateRequestTemplate">
              <xsd:sequence>
                <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>The identifier of the gallery or population group which will be searched.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="MaxListSize" type="xsd:positiveInteger" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>The maximum size of the candidate list that should be returned.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:sequence>
            </xsd:extension>
          </xsd:complexContent>
        </xsd:complexType>
      </xsd:element>
    </xsd:sequence>
  </xsd:complexType>
</xsd:element>

```

```

        </xsd:extension>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="IdentifyResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to an Identify request.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="IdentifyResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:AggregateResponseTemplate">
              <xsd:sequence>
                <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>The identifier of the encounter, if assigned.</xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
                <xsd:element name="CandidateList" type="tns:CandidateListType" minOccurs="0" maxOccurs="1">
                  <xsd:annotation>
                    <xsd:documentation>A rank-ordered list of candidates that have a likelihood of matching the input

```

```

        biometric sample; returned with successful, synchronous processing.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
    <xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A value used to retrieve the results of the Identify request.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveData">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The RetrieveData aggregate service retrieves requested
        information about a subject, or in an encounter-centric model
        about an encounter.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>

```

```

<xsd:element name="RetrieveDataRequest" nillable="true">
  <xsd:complexType>
    <xsd:complexContent>
      <xsd:extension base="tns:RequestTemplate">
        <xsd:sequence>
          <xsd:element name="ProcessingOptions" type="tns:ProcessingOptionsType" minOccurs="1" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>Options that guide how the service request is processed, and may identify what
                type(s) of information should be returned.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
          <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
            <xsd:annotation>
              <xsd:documentation>Includes the identifier of the subject or encounter.</xsd:documentation>
            </xsd:annotation>
          </xsd:element>
        </xsd:sequence>
      </xsd:extension>
    </xsd:complexContent>
  </xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="RetrieveDataResponse">
  <xsd:complexType>

```

```

<xsd:annotation>
  <xsd:documentation>The response to a RetrieveData request.</xsd:documentation>
</xsd:annotation>
<xsd:sequence>
  <xsd:element name="RetrieveDataResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:AggregateResponseTemplate"/>
      </xsd:complexContent>
    </xsd:complexType>
  </xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="Update">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The Update operation updates specified information about a subject, or in an
        encounter-centric model about an encounter.
      </xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateRequest" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>

```

```

<xsd:extension base="tns:AggregateRequestTemplate">
  <xsd:sequence>
    <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>Includes the identifier of the subject or encounter.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="UpdateResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to a Update request.</xsd:documentation>
    </xsd:annotation>
    <xsd:sequence>
      <xsd:element name="UpdateResponsePackage" nillable="true">
        <xsd:complexType>
          <xsd:complexContent>
            <xsd:extension base="tns:AggregateResponseTemplate">
              <xsd:sequence>

```



```

    <xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">
      <xsd:annotation>
        <xsd:documentation>A value used to retrieve the results of the Update request.</xsd:documentation>
      </xsd:annotation>
    </xsd:element>
  </xsd:sequence>
</xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="Verify">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>
        The Verify aggregate service performs a 1:1 verification
        function according to system requirements and/or resources.
        Either the IdentityClaim or ReferenceBIR input data elements in
        the Identity parameter are required.
      </xsd:documentation>
    </xsd:annotation>
  <xsd:sequence>
    <xsd:element name="VerifyRequest" nillable="true">
      <xsd:complexType>

```

```

<xsd:complexContent>
  <xsd:extension base="tns:AggregateRequestTemplate">
    <xsd:sequence>
      <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="1" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>Includes either the IdentityClaim or ReferenceBIR.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
      <xsd:element name="GalleryID" type="tns:BIASIDType" minOccurs="0" maxOccurs="1">
        <xsd:annotation>
          <xsd:documentation>The identifier of the gallery or population group of which the subject must be a member.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
  </xsd:extension>
</xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="VerifyResponse">
  <xsd:complexType>
    <xsd:annotation>
      <xsd:documentation>The response to a Verify request.</xsd:documentation>
    </xsd:annotation>
  </xsd:complexType>

```

```

<xsd:sequence>
  <xsd:element name="VerifyResponsePackage" nillable="true">
    <xsd:complexType>
      <xsd:complexContent>
        <xsd:extension base="tns:AggregateResponseTemplate">
          <xsd:sequence>
            <xsd:element name="Match" type="xsd:boolean" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>Indicates if the Input BIR matched either the biometric information
                  associated with the Identity Claim or the Reference BIR.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="Score" type="tns:ScoreType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The score if the biometric information matched.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="Identity" type="tns:BIASIdentity" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>The identifier of the encounter, if assigned.</xsd:documentation>
              </xsd:annotation>
            </xsd:element>
            <xsd:element name="Token" type="tns:TokenType" minOccurs="0" maxOccurs="1">
              <xsd:annotation>
                <xsd:documentation>A value used to retrieve the results of the Verify request; </xsd:documentation>
              </xsd:annotation>

```

```

        </xsd:element>
      </xsd:sequence>
    </xsd:extension>
  </xsd:complexContent>
</xsd:complexType>
</xsd:element>
</xsd:sequence>
</xsd:complexType>
</xsd:element>
<xsd:element name="BIASFault" type="tns:BIASFaultDetail"/>
</xsd:schema>
</wsdl:types>
<wsdl:message name="BIASFaultMessage">
  <wsdl:part name="parameters" element="tns:BIASFault"/>
</wsdl:message>
<wsdl:message name="AddSubjectToGalleryRequestMessage">
  <wsdl:part name="parameters" element="tns:AddSubjectToGallery"/>
</wsdl:message>
<wsdl:message name="AddSubjectToGalleryResponseMessage">
  <wsdl:part name="parameters" element="tns:AddSubjectToGalleryResponse"/>
</wsdl:message>
<wsdl:message name="CheckQualityRequestMessage">
  <wsdl:part name="parameters" element="tns:CheckQuality"/>
</wsdl:message>
<wsdl:message name="CheckQualityResponseMessage">
  <wsdl:part name="parameters" element="tns:CheckQualityResponse"/>

```

```

</wsdl:message>
<wsdl:message name="ClassifyBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:ClassifyBiometricData"/>
</wsdl:message>
<wsdl:message name="ClassifyBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:ClassifyBiometricDataResponse"/>
</wsdl:message>
<wsdl:message name="CreateSubjectRequestMessage">
  <wsdl:part name="parameters" element="tns:CreateSubject"/>
</wsdl:message>
<wsdl:message name="CreateSubjectResponseMessage">
  <wsdl:part name="parameters" element="tns:CreateSubjectResponse"/>
</wsdl:message>
<wsdl:message name="DeleteBiographicDataRequestMessage">
  <wsdl:part name="parameters" element="tns:DeleteBiographicData"/>
</wsdl:message>
<wsdl:message name="DeleteBiographicDataResponseMessage">
  <wsdl:part name="parameters" element="tns:DeleteBiographicDataResponse"/>
</wsdl:message>
<wsdl:message name="DeleteBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:DeleteBiometricData"/>
</wsdl:message>
<wsdl:message name="DeleteBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:DeleteBiometricDataResponse"/>
</wsdl:message>
<wsdl:message name="DeleteSubjectRequestMessage">

```

```

    <wsdl:part name="parameters" element="tns:DeleteSubject"/>
</wsdl:message>

<wsdl:message name="DeleteSubjectResponseMessage">
    <wsdl:part name="parameters" element="tns:DeleteSubjectResponse"/>
</wsdl:message>

<wsdl:message name="DeleteSubjectFromGalleryRequestMessage">
    <wsdl:part name="parameters" element="tns:DeleteSubjectFromGallery"/>
</wsdl:message>

<wsdl:message name="DeleteSubjectFromGalleryResponseMessage">
    <wsdl:part name="parameters" element="tns:DeleteSubjectFromGalleryResponse"/>
</wsdl:message>

<wsdl:message name="GetIdentifySubjectResultsRequestMessage">
    <wsdl:part name="parameters" element="tns:GetIdentifySubjectResults"/>
</wsdl:message>

<wsdl:message name="GetIdentifySubjectResultsResponseMessage">
    <wsdl:part name="parameters" element="tns:GetIdentifySubjectResultsResponse"/>
</wsdl:message>

<wsdl:message name="IdentifySubjectRequestMessage">
    <wsdl:part name="parameters" element="tns:IdentifySubject"/>
</wsdl:message>

<wsdl:message name="IdentifySubjectResponseMessage">
    <wsdl:part name="parameters" element="tns:IdentifySubjectResponse"/>
</wsdl:message>

<wsdl:message name="ListBiographicDataRequestMessage">
    <wsdl:part name="parameters" element="tns:ListBiographicData"/>
</wsdl:message>

```

```

<wsdl:message name="ListBiographicDataResponseMessage">
  <wsdl:part name="parameters" element="tns:ListBiographicDataResponse"/>
</wsdl:message>

<wsdl:message name="ListBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:ListBiometricData"/>
</wsdl:message>

<wsdl:message name="ListBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:ListBiometricDataResponse"/>
</wsdl:message>

<wsdl:message name="PerformFusionRequestMessage">
  <wsdl:part name="parameters" element="tns:PerformFusion"/>
</wsdl:message>

<wsdl:message name="PerformFusionResponseMessage">
  <wsdl:part name="parameters" element="tns:PerformFusionResponse"/>
</wsdl:message>

<wsdl:message name="QueryCapabilitiesRequestMessage">
  <wsdl:part name="parameters" element="tns:QueryCapabilities"/>
</wsdl:message>

<wsdl:message name="QueryCapabilitiesResponseMessage">
  <wsdl:part name="parameters" element="tns:QueryCapabilitiesResponse"/>
</wsdl:message>

<wsdl:message name="RetrieveBiographicDataRequestMessage">
  <wsdl:part name="parameters" element="tns:RetrieveBiographicData"/>
</wsdl:message>

<wsdl:message name="RetrieveBiographicDataResponseMessage">
  <wsdl:part name="parameters" element="tns:RetrieveBiographicDataResponse"/>

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```

</wsdl:message>

<wsdl:message name="RetrieveBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:RetrieveBiometricData"/>
</wsdl:message>

<wsdl:message name="RetrieveBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:RetrieveBiometricDataResponse"/>
</wsdl:message>

<wsdl:message name="SetBiographicDataRequestMessage">
  <wsdl:part name="parameters" element="tns:SetBiographicData"/>
</wsdl:message>

<wsdl:message name="SetBiographicDataResponseMessage">
  <wsdl:part name="parameters" element="tns:SetBiographicDataResponse"/>
</wsdl:message>

<wsdl:message name="SetBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:SetBiometricData"/>
</wsdl:message>

<wsdl:message name="SetBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:SetBiometricDataResponse"/>
</wsdl:message>

<wsdl:message name="TransformBiometricDataRequestMessage">
  <wsdl:part name="parameters" element="tns:TransformBiometricData"/>
</wsdl:message>

<wsdl:message name="TransformBiometricDataResponseMessage">
  <wsdl:part name="parameters" element="tns:TransformBiometricDataResponse"/>
</wsdl:message>

<wsdl:message name="UpdateBiographicDataRequestMessage">

```



```

    <wsdl:part name="parameters" element="tns:UpdateBiographicData"/>
</wsdl:message>
<wsdl:message name="UpdateBiographicDataResponseMessage">
    <wsdl:part name="parameters" element="tns:UpdateBiographicDataResponse"/>
</wsdl:message>
<wsdl:message name="UpdateBiometricDataRequestMessage">
    <wsdl:part name="parameters" element="tns:UpdateBiometricData"/>
</wsdl:message>
<wsdl:message name="UpdateBiometricDataResponseMessage">
    <wsdl:part name="parameters" element="tns:UpdateBiometricDataResponse"/>
</wsdl:message>
<wsdl:message name="VerifySubjectRequestMessage">
    <wsdl:part name="parameters" element="tns:VerifySubject"/>
</wsdl:message>
<wsdl:message name="VerifySubjectResponseMessage">
    <wsdl:part name="parameters" element="tns:VerifySubjectResponse"/>
</wsdl:message>
<wsdl:message name="EnrollRequestMessage">
    <wsdl:part name="parameters" element="tns:Enroll"/>
</wsdl:message>
<wsdl:message name="EnrollResponseMessage">
    <wsdl:part name="parameters" element="tns:EnrollResponse"/>
</wsdl:message>
<wsdl:message name="GetEnrollResultsRequestMessage">
    <wsdl:part name="parameters" element="tns:GetEnrollResults"/>
</wsdl:message>

```

```

<wsdl:message name="GetEnrollResultsResponseMessage">
  <wsdl:part name="parameters" element="tns:GetEnrollResultsResponse"/>
</wsdl:message>

<wsdl:message name="GetIdentifyResultsRequestMessage">
  <wsdl:part name="parameters" element="tns:GetIdentifyResults"/>
</wsdl:message>

<wsdl:message name="GetIdentifyResultsResponseMessage">
  <wsdl:part name="parameters" element="tns:GetIdentifyResultsResponse"/>
</wsdl:message>

<wsdl:message name="GetVerifyResultsRequestMessage">
  <wsdl:part name="parameters" element="tns:GetVerifyResults"/>
</wsdl:message>

<wsdl:message name="GetVerifyResultsResponseMessage">
  <wsdl:part name="parameters" element="tns:GetVerifyResultsResponse"/>
</wsdl:message>

<wsdl:message name="IdentifyRequestMessage">
  <wsdl:part name="parameters" element="tns:Identify"/>
</wsdl:message>

<wsdl:message name="IdentifyResponseMessage">
  <wsdl:part name="parameters" element="tns:IdentifyResponse"/>
</wsdl:message>

<wsdl:message name="RetrieveDataRequestMessage">
  <wsdl:part name="parameters" element="tns:RetrieveData"/>
</wsdl:message>

<wsdl:message name="RetrieveDataResponseMessage">
  <wsdl:part name="parameters" element="tns:RetrieveDataResponse"/>

```

```

</wsdl:message>
<wsdl:message name="VerifyRequestMessage">
  <wsdl:part name="parameters" element="tns:Verify"/>
</wsdl:message>
<wsdl:message name="VerifyResponseMessage">
  <wsdl:part name="parameters" element="tns:VerifyResponse"/>
</wsdl:message>
<wsdl:portType name="BIAS_v2">
  <wsdl:operation name="AddSubjectToGallery">
    <wsdl:input name="AddSubjectToGallery" message="tns:AddSubjectToGalleryRequestMessage"/>
    <wsdl:output name="AddSubjectToGalleryResponse" message="tns:AddSubjectToGalleryResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>
  <wsdl:operation name="CheckQuality">
    <wsdl:input name="CheckQuality" message="tns:CheckQualityRequestMessage"/>
    <wsdl:output name="CheckQualityResponse" message="tns:CheckQualityResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>
  <wsdl:operation name="ClassifyBiometricData">
    <wsdl:input name="ClassifyBiometricData" message="tns:ClassifyBiometricDataRequestMessage"/>
    <wsdl:output name="ClassifyBiometricDataResponse" message="tns:ClassifyBiometricDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>
  <wsdl:operation name="CreateSubject">
    <wsdl:input name="CreateSubject" message="tns:CreateSubjectRequestMessage"/>
    <wsdl:output name="CreateSubjectResponse" message="tns:CreateSubjectResponseMessage"/>
  </wsdl:operation>

```

```

    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="DeleteBiographicData">
    <wsdl:input name="DeleteBiographicData" message="tns:DeleteBiographicDataRequestMessage"/>
    <wsdl:output name="DeleteBiographicDataResponse" message="tns:DeleteBiographicDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="DeleteBiometricData">
    <wsdl:input name="DeleteBiometricData" message="tns:DeleteBiometricDataRequestMessage"/>
    <wsdl:output name="DeleteBiometricDataResponse" message="tns:DeleteBiometricDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="DeleteSubject">
    <wsdl:input name="DeleteSubject" message="tns:DeleteSubjectRequestMessage"/>
    <wsdl:output name="DeleteSubjectResponse" message="tns:DeleteSubjectResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="DeleteSubjectFromGallery">
    <wsdl:input name="DeleteSubjectFromGallery" message="tns:DeleteSubjectFromGalleryRequestMessage"/>
    <wsdl:output name="DeleteSubjectFromGalleryResponse" message="tns:DeleteSubjectFromGalleryResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="GetIdentifySubjectResults">
    <wsdl:input name="GetIdentifySubjectResults" message="tns:GetIdentifySubjectResultsRequestMessage"/>
    <wsdl:output name="GetIdentifySubjectResultsResponse" message="tns:GetIdentifySubjectResultsResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>

```

```

</wsdl:operation>
<wsdl:operation name="IdentifySubject">
  <wsdl:input name="IdentifySubject" message="tns:IdentifySubjectRequestMessage"/>
  <wsdl:output name="IdentifySubjectResponse" message="tns:IdentifySubjectResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="ListBiographicData">
  <wsdl:input name="ListBiographicData" message="tns:ListBiographicDataRequestMessage"/>
  <wsdl:output name="ListBiographicDataResponse" message="tns:ListBiographicDataResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="ListBiometricData">
  <wsdl:input name="ListBiometricData" message="tns:ListBiometricDataRequestMessage"/>
  <wsdl:output name="ListBiometricDataResponse" message="tns:ListBiometricDataResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="PerformFusion">
  <wsdl:input name="PerformFusion" message="tns:PerformFusionRequestMessage"/>
  <wsdl:output name="PerformFusionResponse" message="tns:PerformFusionResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>
<wsdl:operation name="QueryCapabilities">
  <wsdl:input name="QueryCapabilities" message="tns:QueryCapabilitiesRequestMessage"/>
  <wsdl:output name="QueryCapabilitiesResponse" message="tns:QueryCapabilitiesResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

```

```

<wsdl:operation name="RetrieveBiographicData">

    <wsdl:input name="RetrieveBiographicData" message="tns:RetrieveBiographicDataRequestMessage"/>
    <wsdl:output name="RetrieveBiographicDataResponse" message="tns:RetrieveBiographicDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="RetrieveBiometricData">
    <wsdl:input name="RetrieveBiometricData" message="tns:RetrieveBiometricDataRequestMessage"/>
    <wsdl:output name="RetrieveBiometricDataResponse" message="tns:RetrieveBiometricDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="SetBiographicData">
    <wsdl:input name="SetBiographicData" message="tns:SetBiographicDataRequestMessage"/>
    <wsdl:output name="SetBiographicDataResponse" message="tns:SetBiographicDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="SetBiometricData">
    <wsdl:input name="SetBiometricData" message="tns:SetBiometricDataRequestMessage"/>
    <wsdl:output name="SetBiometricDataResponse" message="tns:SetBiometricDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="TransformBiometricData">
    <wsdl:input name="TransformBiometricData" message="tns:TransformBiometricDataRequestMessage"/>
    <wsdl:output name="TransformBiometricDataResponse" message="tns:TransformBiometricDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

```

```

<wsdl:operation name="UpdateBiographicData">
  <wsdl:input name="UpdateBiographicData" message="tns:UpdateBiographicDataRequestMessage"/>
  <wsdl:output name="UpdateBiographicDataResponse" message="tns:UpdateBiographicDataResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="UpdateBiometricData">
  <wsdl:input name="UpdateBiometricData" message="tns:UpdateBiometricDataRequestMessage"/>
  <wsdl:output name="UpdateBiometricDataResponse" message="tns:UpdateBiometricDataResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="VerifySubject">
  <wsdl:input name="VerifySubject" message="tns:VerifySubjectRequestMessage"/>
  <wsdl:output name="VerifySubjectResponse" message="tns:VerifySubjectResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="Enroll">
  <wsdl:input name="Enroll" message="tns:EnrollRequestMessage"/>
  <wsdl:output name="EnrollResponse" message="tns:EnrollResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="GetEnrollResults">
  <wsdl:input name="GetEnrollResults" message="tns:GetEnrollResultsRequestMessage"/>
  <wsdl:output name="GetEnrollResultsResponse" message="tns:GetEnrollResultsResponseMessage"/>
  <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
</wsdl:operation>

<wsdl:operation name="GetIdentifyResults">

```

```

    <wsdl:input name="GetIdentifyResults" message="tns:GetIdentifyResultsRequestMessage"/>
    <wsdl:output name="GetIdentifyResultsResponse" message="tns:GetIdentifyResultsResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>

  <wsdl:operation name="GetVerifyResults">
    <wsdl:input name="GetVerifyResults" message="tns:GetVerifyResultsRequestMessage"/>
    <wsdl:output name="GetVerifyResultsResponse" message="tns:GetVerifyResultsResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>

  <wsdl:operation name="Identify">
    <wsdl:input name="Identify" message="tns:IdentifyRequestMessage"/>
    <wsdl:output name="IdentifyResponse" message="tns:IdentifyResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>

  <wsdl:operation name="RetrieveData">
    <wsdl:input name="RetrieveData" message="tns:RetrieveDataRequestMessage"/>
    <wsdl:output name="RetrieveDataResponse" message="tns:RetrieveDataResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>

  <wsdl:operation name="Verify">
    <wsdl:input name="Verify" message="tns:VerifyRequestMessage"/>
    <wsdl:output name="VerifyResponse" message="tns:VerifyResponseMessage"/>
    <wsdl:fault name="BIASFault" message="tns:BIASFaultMessage"/>
  </wsdl:operation>
</wsdl:portType>

<wsdl:binding name="BIAS_v2HttpBinding" type="tns:BIAS_v2">

```



```

<soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
<wsdl:operation name="AddSubjectToGallery">
  <soap:operation soapAction="AddSubjectToGallery"/>
  <wsdl:input name="AddSubjectToGallery">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="AddSubjectToGalleryResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="CheckQuality">
  <soap:operation soapAction="CheckQuality"/>
  <wsdl:input name="CheckQuality">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="CheckQualityResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="ClassifyBiometricData">

```

```

<soap:operation soapAction="ClassifyBiometricData"/>
<wsdl:input name="ClassifyBiometricData">
  <soap:body use="literal"/>
</wsdl:input>
<wsdl:output name="ClassifyBiometricDataResponse">
  <soap:body use="literal"/>
</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="CreateSubject">
  <soap:operation soapAction="CreateSubject"/>
  <wsdl:input name="CreateSubject">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="CreateSubjectResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="DeleteBiographicData">
  <soap:operation soapAction="DeleteBiographicData"/>
  <wsdl:input name="DeleteBiographicData">

```

```

    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="DeleteBiographicDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="DeleteBiometricData">
  <soap:operation soapAction="DeleteBiometricData"/>
  <wsdl:input name="DeleteBiometricData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="DeleteBiometricDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="DeleteSubject">
  <soap:operation soapAction="DeleteSubject"/>
  <wsdl:input name="DeleteSubject">
    <soap:body use="literal"/>
  </wsdl:input>

```

```

<wsdl:output name="DeleteSubjectResponse">
  <soap:body use="literal"/>
</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="DeleteSubjectFromGallery">
  <soap:operation soapAction="DeleteSubjectFromGallery"/>
  <wsdl:input name="DeleteSubjectFromGallery">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="DeleteSubjectFromGalleryResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetIdentifySubjectResults">
  <soap:operation soapAction="GetIdentifySubjectResults"/>
  <wsdl:input name="GetIdentifySubjectResults">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="GetIdentifySubjectResultsResponse">
    <soap:body use="literal"/>
  </wsdl:output>

```

```

</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="IdentifySubject">
  <soap:operation soapAction="IdentifySubject"/>
  <wsdl:input name="IdentifySubject">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="IdentifySubjectResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="ListBiographicData">
  <soap:operation soapAction="ListBiographicData"/>
  <wsdl:input name="ListBiographicData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="ListBiographicDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">

```

```

        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="ListBiometricData">
    <soap:operation soapAction="ListBiometricData"/>
    <wsdl:input name="ListBiometricData">
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output name="ListBiometricDataResponse">
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="BIASFault">
        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="PerformFusion">
    <soap:operation soapAction="PerformFusion"/>
    <wsdl:input name="PerformFusion">
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output name="PerformFusionResponse">
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="BIASFault">
        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>

```

```

</wsdl:operation>
<wsdl:operation name="QueryCapabilities">
  <soap:operation soapAction="QueryCapabilities"/>
  <wsdl:input name="QueryCapabilities">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="QueryCapabilitiesResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RetrieveBiographicData">
  <soap:operation soapAction="RetrieveBiographicData"/>
  <wsdl:input name="RetrieveBiographicData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="RetrieveBiographicDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RetrieveBiometricData">

```

```

<soap:operation soapAction="RetrieveBiometricData"/>
<wsdl:input name="RetrieveBiometricData">
  <soap:body use="literal"/>
</wsdl:input>
<wsdl:output name="RetrieveBiometricDataResponse">
  <soap:body use="literal"/>
</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="SetBiographicData">
  <soap:operation soapAction="SetBiographicData"/>
  <wsdl:input name="SetBiographicData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="SetBiographicDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="SetBiometricData">
  <soap:operation soapAction="SetBiometricData"/>
  <wsdl:input name="SetBiometricData">

```



```

    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="SetBiometricDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="TransformBiometricData">
  <soap:operation soapAction="TransformBiometricData"/>
  <wsdl:input name="TransformBiometricData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="TransformBiometricDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="UpdateBiographicData">
  <soap:operation soapAction="UpdateBiographicData"/>
  <wsdl:input name="UpdateBiographicData">
    <soap:body use="literal"/>
  </wsdl:input>

```

```

<wsdl:output name="UpdateBiographicDataResponse">
  <soap:body use="literal"/>
</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="UpdateBiometricData">
  <soap:operation soapAction="UpdateBiometricData"/>
  <wsdl:input name="UpdateBiometricData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="UpdateBiometricDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="VerifySubject">
  <soap:operation soapAction="VerifySubject"/>
  <wsdl:input name="VerifySubject">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="VerifySubjectResponse">
    <soap:body use="literal"/>
  </wsdl:output>
</wsdl:operation>

```

```

</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
<wsdl:operation name="Enroll">
  <soap:operation soapAction="Enroll"/>
  <wsdl:input name="Enroll">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="EnrollResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetEnrollResults">
  <soap:operation soapAction="GetEnrollResults"/>
  <wsdl:input name="GetEnrollResults">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="GetEnrollResultsResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">

```

```

        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetIdentifyResults">
    <soap:operation soapAction="GetIdentifyResults"/>
    <wsdl:input name="GetIdentifyResults">
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output name="GetIdentifyResultsResponse">
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="BIASFault">
        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="GetVerifyResults">
    <soap:operation soapAction="GetVerifyResults"/>
    <wsdl:input name="GetVerifyResults">
        <soap:body use="literal"/>
    </wsdl:input>
    <wsdl:output name="GetVerifyResultsResponse">
        <soap:body use="literal"/>
    </wsdl:output>
    <wsdl:fault name="BIASFault">
        <soap:fault name="BIASFault" use="literal"/>
    </wsdl:fault>

```

```

</wsdl:operation>
<wsdl:operation name="Identify">
  <soap:operation soapAction="Identify"/>
  <wsdl:input name="Identify">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="IdentifyResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="RetrieveData">
  <soap:operation soapAction="RetrieveData"/>
  <wsdl:input name="RetrieveData">
    <soap:body use="literal"/>
  </wsdl:input>
  <wsdl:output name="RetrieveDataResponse">
    <soap:body use="literal"/>
  </wsdl:output>
  <wsdl:fault name="BIASFault">
    <soap:fault name="BIASFault" use="literal"/>
  </wsdl:fault>
</wsdl:operation>
<wsdl:operation name="Verify">

```

```
<soap:operation soapAction="Verify"/>
<wsdl:input name="Verify">
  <soap:body use="literal"/>
</wsdl:input>
<wsdl:output name="VerifyResponse">
  <soap:body use="literal"/>
</wsdl:output>
<wsdl:fault name="BIASFault">
  <soap:fault name="BIASFault" use="literal"/>
</wsdl:fault>
</wsdl:operation>
</wsdl:binding>
<wsdl:service name="BIAS_v2">
  <wsdl:port name="BIAS_v2HttpBindingPort" binding="tns:BIAS_v2HttpBinding">
    <soap:address location="http://your_URI/IRI_to_your_BIAS_implementation"/>
  </wsdl:port>
</wsdl:service>
</wsdl:definitions>
```

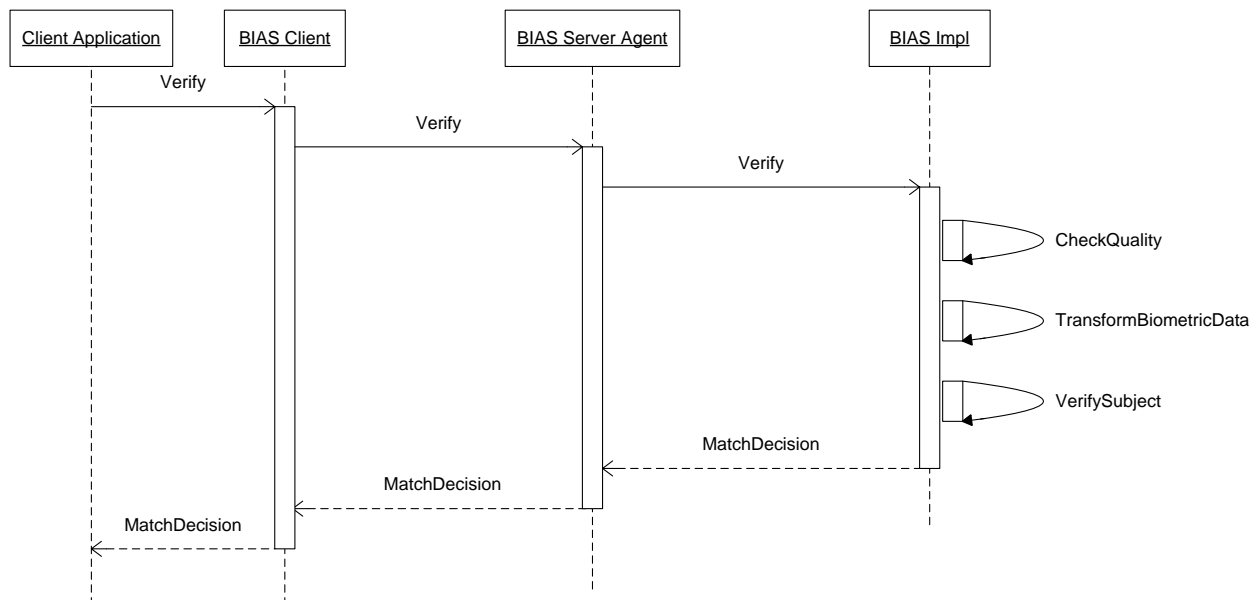
## Appendix B. Use Cases (non-normative)

The intent of this annex is to provide operational sequence diagrams / flow charts that show how the higher level usage scenarios within [ISO/IEC-BIAS] could be implemented using the BIAS SOAP profile. The following use cases are given:

- Verification (synchronous/aggregate)
- Verification (asynchronous/aggregate)
- Verification (primitive)
- Identification (primitive)
- Enrollment (aggregate)
- Enrollment (primitive)

### B.1 Verification Use Case

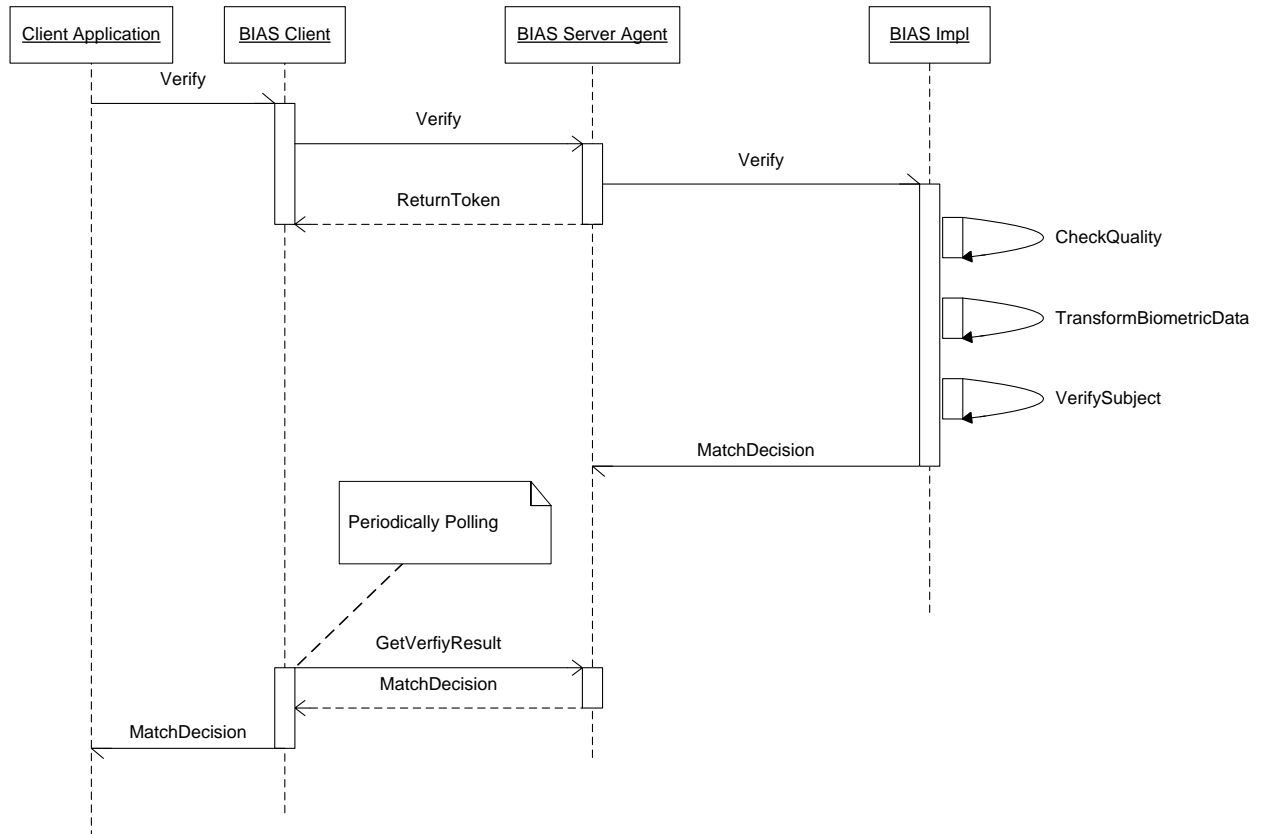
This use case uses the aggregate Verify operation in which a single request results in some set of operations (in this case, a series of primitive BIAS operations) being performed by the BIAS service provider.



Note that  
1. CheckQuality, TransformBiometricData, VerifySubject can be exposed as interfaces of BIAS server agent.

## B.2 Asynchronous Verification Use Case

In this use case, the requester issues two requests – the BIAS Verify request to initiate the operation followed by a BIAS GetVerifyResult request to retrieve the results of that operation.

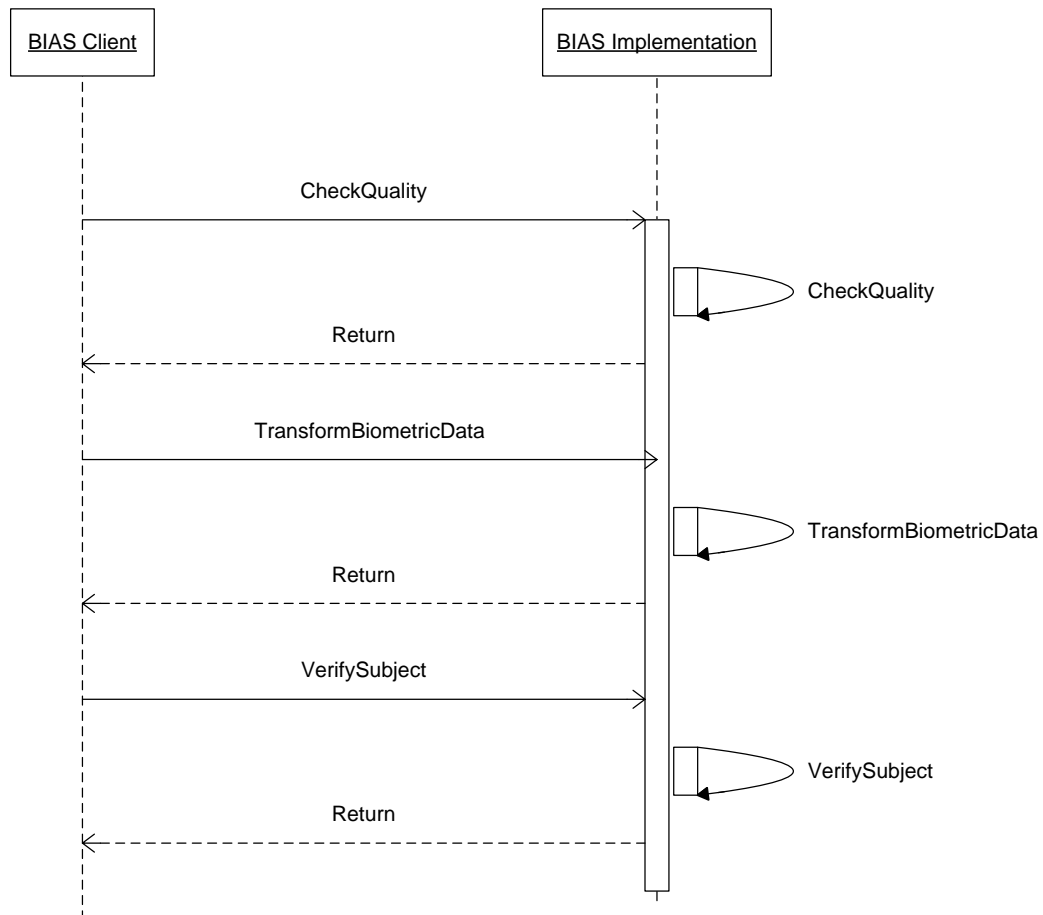


Note that  
1. CheckQuality, TransformBiometricData, VerifySubject can be exposed as interfaces of BIAS server agent.



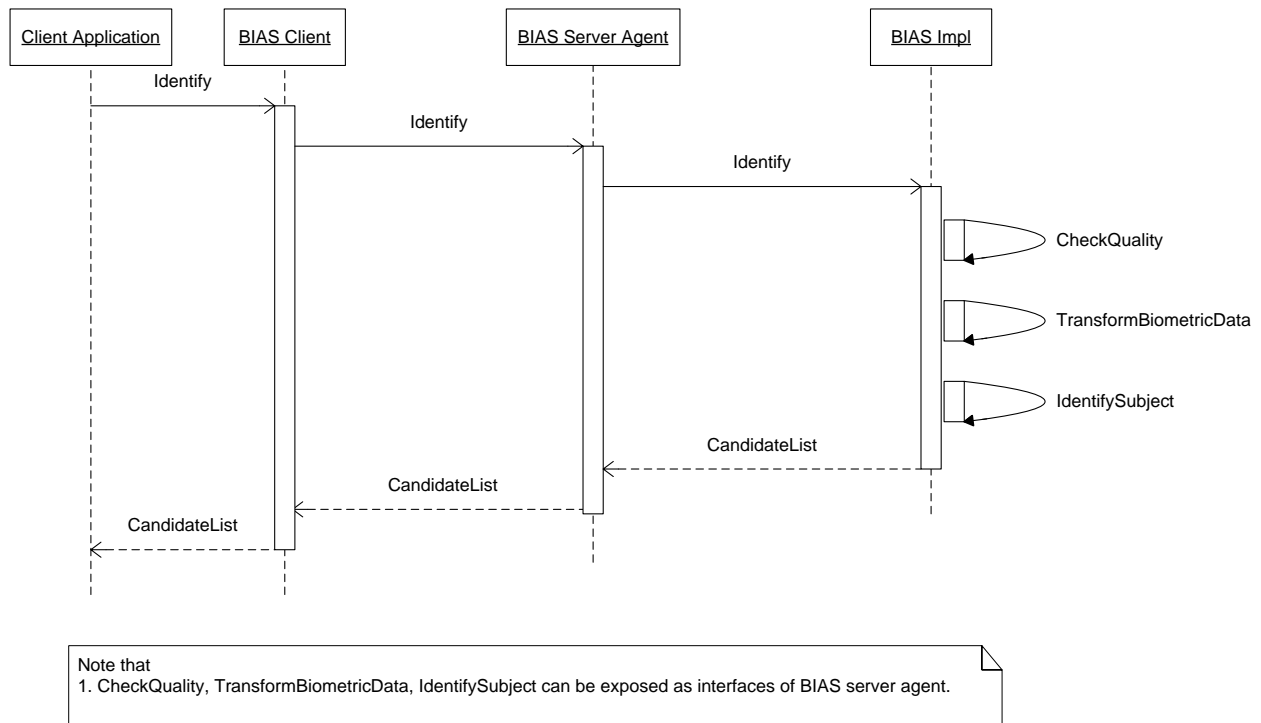
### B.3 Primitive Verification Use Case

In this use case, the verification operation is performed as a series of requests using the BIAS primitive operations. In this case, the client rather than the service provider controls the workflow of the higher level operation.



## B.4 Identification Use Case

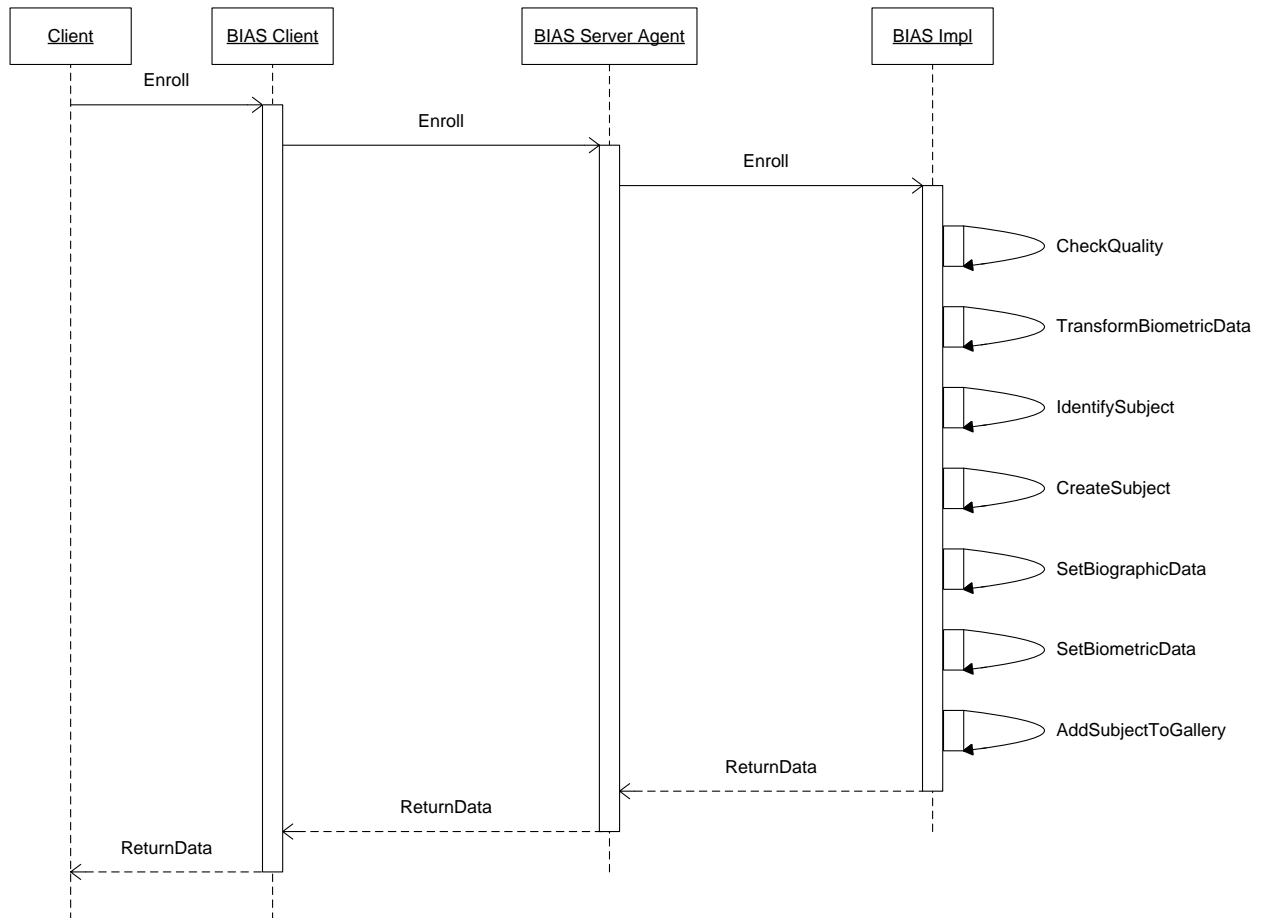
This use case uses the aggregate Identify operation in which a single request results in some set of operations (in this case, a series of primitive BIAS operations) being performed by the BIAS service provider.



## B.5 Biometric Enrollment Use Case

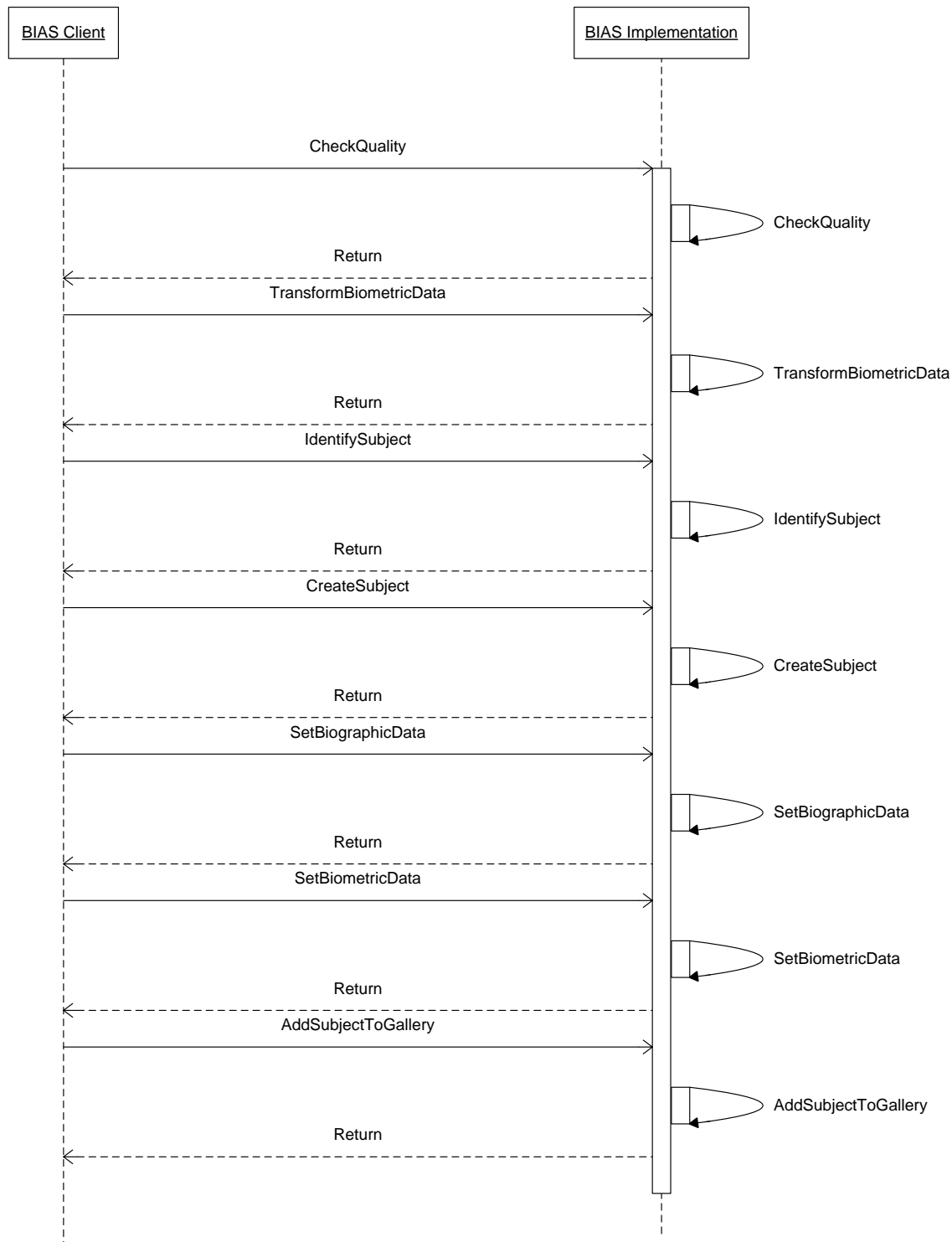
This use case uses the aggregate Enroll operation in which a single request results in some set of operations (in this case, a series of primitive BIAS operations) being performed by the BIAS service provider.

Here, if the result of the IdentifySubject is no matches found, then the subject is added to the gallery. If a match had been found then other logic may have been applied (e.g., return candidate list, add encounter for existing subject, etc.).



## B.6 Primitive Enrollment Use Case

In this use case, the enrollment operation is performed as a series of requests using the BIAS primitive operations. In this case, the client rather than the service provider controls the workflow of the higher level operation.



---

## Appendix C. Samples (non-normative)

### C.1 Create Subject Request/Response Example

*ISO/IEC BIAS Specification*

```
<interface name="CreateSubject">
  <parameter name="SubjectID" type="xs:string" direction="inout" use="optional" />
  <parameter name="Return" type="xs:unsignedLong" direction="out" />
</interface>
```

*OASIS BIAS Examples*

#### **Simple Create Subject Request:**

POST /bias HTTP/1.1

Host: [www.acme.com](http://www.acme.com)

Content-Type: application/soap+xml; charset="utf-8"

Content-Length: nnnn

SOAPAction: "CreateSubject"

<?xml version="1.0"?>

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Body>
    <tns:CreateSubject
      xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/" />
  </soap:Body>
</soap:Envelope>
```

#### **Create Subject Request with SubjectID Parameter:**

POST /bias HTTP/1.1

Host: [www.acme.com](http://www.acme.com)

Content-Type: application/soap+xml; charset="utf-8"

Content-Length: nnnn

SOAPAction: "CreateSubject"

<?xml version="1.0"?>

```
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Body>
    <tns:CreateSubject xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
      <tns:Identity>
        <tns:SubjectID>123456789</tns:SubjectID>
      </tns:Identity>
    </tns:CreateSubject>
  </soap:Body>
</soap:Envelope>
```

#### **Create Subject Request with Optional OASIS BIAS Content:**

POST /bias HTTP/1.1

Host: [www.acme.com](http://www.acme.com)

Content-Type: application/soap+xml; charset="utf-8"  
Content-Length: nnnn  
SOAPAction: "CreateSubject"  
<?xml version="1.0"?>  
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">  
 <soap:Body>  
 <tns:CreateSubject xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">  
 <tns:GenericRequestParameters>  
 <tns:Application>BIAS Application</tns:Application>  
 <tns:ApplicationUser>BIAS User</tns:ApplicationUser>  
 </tns:GenericRequestParameters>  
 <tns:Identity>  
 <tns:SubjectID>123456789</tns:SubjectID>  
 </tns:Identity>  
 </tns:CreateSubject>  
 </soap:Body>  
</soap:Envelope>

**Simple Create Subject Response:**

HTTP/1.1 200 OK  
Content-Type: application/soap+xml; charset="utf-8"  
Content-Length: nnnn  
<?xml version="1.0"?>  
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">  
 <soap:Body>  
 <tns:CreateSubjectResponse xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">  
 <tns:ResponseStatus>  
 <tns:Return>0</tns:Return>  
 </tns:ResponseStatus>  
 <tns:Identity>  
 <tns:SubjectID>123456789</tns:SubjectID>  
 </tns:Identity>  
 </tns:CreateSubjectResponse>  
 </soap:Body>  
</soap:Envelope>

**Create Subject Response with Optional OASIS BIAS Content:**

HTTP/1.1 200 OK  
Content-Type: application/soap+xml; charset="utf-8"  
Content-Length: nnnn  
<?xml version="1.0"?>  
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">  
 <soap:Body>  
 <tns:CreateSubjectResponse xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">  
 <tns:ResponseStatus>

```

        <tns:Return>0</tns:Return>
        <tns:Message>Subject ID 123456789 successfully
created.</tns:Message>
    </tns:ResponseStatus>
    <tns:Identity>
        <tns:SubjectID>123456789</tns:SubjectID>
    </tns:Identity>
</tns:CreateSubjectResponse>
</soap:Body>
</soap:Envelope>

```

## C.2 Set Biographic Data Request/Response Example

*ISO/IEC BIAS Specification*

```

<interface name="SetBiographicData">
    <parameter name="SubjectID" type="xs:string" direction="in" />
    <parameter name="IdentityModel" type="IdentityModelType" direction="in" />
    <parameter name="EncounterID" type="xs:string" direction="inout" use="optional" />
    <parameter name="BiographicData" type="BiographicDataType" direction="in" />
    <parameter name="Return" type="xs:unsignedLong" direction="out" />
</interface>

```

*OASIS BIAS Examples*

### Set Biographic Data Request:

POST /bias HTTP/1.1

Host: [www.acme.com](http://www.acme.com)

Content-Type: application/soap+xml; charset="utf-8"

Content-Length: nnnn

SOAPAction: "SetBiographicData"

<?xml version="1.0"?>

```

<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Body>
        <tns:SetBiographicData
            xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
            <tns:Identity>
                <tns:SubjectID>123456789</tns:SubjectID>
                <tns:BiographicData>
                    <tns:BiographicDataItem>
                        <tns:Name>Last</tns:Name>
                        <tns:Type>string</tns:Type>
                        <tns:Value>Doe</tns:Value>
                    </tns:BiographicDataItem>
                </tns:BiographicData>
            </tns:Identity>

```

```

        <tns:IdentityModel>person</tns:IdentityModel>
      </tns:SetBiographicData>
    </soap:Body>
  </soap:Envelope>
Set Biographic Data Response:
HTTP/1.1 200 OK
Content-Type: application/soap+xml; charset="utf-8"
Content-Length: nnnn
<?xml version="1.0"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Body>
    <tns:SetBiographicDataResponse
      xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
      <tns:ResponseStatus>
        <tns:Return>0</tns:Return>
      </tns:ResponseStatus>
    </tns:SetBiographicDataResponse>
  </soap:Body>
</soap:Envelope>

```

## C.3 Set Biometric Data Request/Response Example

*ISO/IEC BIAS Specification*

```

<interface name="SetBiometricData">
  <parameter name="SubjectID" type="xs:string" direction="in" />
  <parameter name="IdentityModel" type="IdentityModelType" direction="in" />
  <parameter name="EncounterID" type="xs:string" direction="inout" use="optional" />
  <parameter name="BIRList" type="CBEFF_BIR_ListType" direction="in" />
  <parameter name="Return" type="xs:unsignedLong" direction="out" />
</interface>

```

*OASIS BIAS Examples*

**Set Biometric Data Request:**

```

POST /bias HTTP/1.1
Host: www.acme.com
Content-Type: application/soap+xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: "SetBiometricData"
<?xml version="1.0"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
  <soap:Body>
    <tns:SetBiometricData
      xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
      <tns:Identity>

```



```

        <tns:SubjectID>123456789</tns:SubjectID>
        <tns:BiometricData>
            <tns:BIRList>
                <tns:BIR>biometric data</tns:BIR>
            </tns:BIRList>
        </tns:BiometricData>
    </tns:Identity>
    <tns:IdentityModel>person</tns:IdentityModel>
</tns:SetBiometricData>
</soap:Body>
</soap:Envelope>
Set Biometric Data Response:
HTTP/1.1 200 OK
Content-Type: application/soap+xml; charset="utf-8"
Content-Length: nnnn
<?xml version="1.0"?>
<soap:Envelope xmlns:soap="http://www.w3.org/2003/05/soap-envelope">
    <soap:Body>
        <tns:SetBiometricDataResponse
            xmlns:tns="http://docs.oasis-open.org/bias/bias-1.0/">
            <tns:ResponseStatus>
                <tns:Return>0</tns:Return>
            </tns:ResponseStatus>
        </tns:SetBiometricDataResponse>
    </soap:Body>
</soap:Envelope>

```

---

## Appendix D. Acknowledgements

The following individuals have participated in the creation of this specification and are gratefully acknowledged:

### Participants:

Name	Affiliation
Mr. Young Bang	Booz Allen Hamilton
Mr. Ed. Clay	Sun
Mr. Murty Gurajada *	Raining Data Corporation
Mr. Dale Hapeman	US Department of Defense
Dr. Charles Li	Raytheon
Mr. Kevin Mangold	NIST
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Dr. Ross Michaels	NIST
Mr. Ramesh Nagappan	Sun
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Mr. Matthew Swayze	Daon
Mr. Guy Swope*	Raytheon
Mrs. Catherine Tilton	Daon
Mr. Alessandro Triglia*	OSS Nokalva
Mr. Matthew Young	US Department of Defense
Mr. Brad Wing	NIST (formerly DHS)
Mr. Michael Wittman*	Raytheon
Mr. Gregory Zektser	Booz Allen Hamilton

\* Though no longer members of the BIAS TC at time of publication, these individuals contributed in the early stages of the development of this standard.

In addition, the inputs from the ISO/IEC technical committee are also gratefully appreciated.

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## Appendix E. Revision History

Revision	Date	Editor	Changes Made
WD 1	2015-XX-XX	Kevin Mangold	