Enrollment Service Provider to System Infrastructure Provider Interface Specification

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FINAL

hspd12

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1 Introduction

This document provides the interface specification for Enrollment Service Provider (ESP) and Systems Infrastructure Provider (SIP) data exchange. It is a standard, re-usable shared service specification for Federal government-wide use, per [SCI Architecture]. Therefore, one should read [SCI Architecture] before reading this specification.

The ESP retrieves applicant information from the SIP. Technical interoperation with the SIP is via SOAP-wrapped Extensible Markup Language (XML) messages over Hypertext Transfer Protocol Secure (HTTPS).

All SOAP messages are signed in accordance with [WS-Security]. All SOAP messages that include personally identifiable information (PII) are encrypted in accordance with [WS-Security].

All transaction datatypes are in accordance with [XML Datatypes] and [WS-SWA]. Table 1-1 describes the schemas and associated namespaces that are imported.

Table 1-1: Namespace Listing

Schema	Namespace	Prefix
WS-Security SWA Profile	http://ws-i.org/profiles/basic/1.1/xsd	swa
Common Elements	http://hspd12.gsa.gov/federated/enrollment	hspd12

Section 2, Data Elements and Structures, defines various groupings of data. Section 3, Transaction/Message Content Summary, specifies how the data groupings are combined into specific request and response transactions (i.e., SOAP-wrapped XML messages). Section 4, Technical Specification, provides XML samples of the transactions summarized in Section 2.

This document recognizes [NIST 800-47], and does not preclude adherence to its guidelines for planning, establishing, maintaining, and terminating interconnections between information technology (IT) systems that are owned and operated by different organizations.

1.1 Authority

This document has been developed on behalf of The Office of Governmentwide Policy and the HSPD-12 Executive Steering Committee in furtherance of their charter to implement HSPD-12 from a "national" perspective.

1.2 References

[Common Elements]   HSPD-12 Shared Component Infrastructure Interface Specification Common Elelments
http://www.smart.gov/awg/documents/InterfaceSpecCommonElements.pdf

[EFTS]   Electronic Fingerprint Transmission Specification; DOJ FBI Criminal Justice Information Services (CJIS); May 2, 2005
http://www.fbi.gov/hq/cjisd/iafis/efts71/efts71.pdf

[FINGSTD]   INCITS 381-2004, American National Standard for Information Technology - Finger Image-Based Data Interchange Format
http://www.incits.org

[MINUSTD]   INCITS 378-2004, American National Standard for Information Technology - Finger Minutiae Format for Data Interchange
http://www.incits.org

[NIST 800-47]   Security Guide for Interconnecting Information Technology Systems
http://csrc.nist.gov/publications/nistpubs/800-47/sp800-47.pdf

[NIST 800-76]   Biometric Data Specification For Personal Identity Verification
http://csrc.nist.gov/publications/drafts/800-76-1/SP800-76-1_draft.pdf

[NIST 800-87]   Codes for the Identification of Federal and Federally Assisted Organizations
http://csrc.nist.gov/publications/nistpubs/800-87/sp800-87-Final.pdf

[SCI Architecture]   HSPD-12 Shared Component Architecture
http://www.smart.gov/awg/documents/HSPD12sca.pdf

[SCI Interoperability]   HSPD-12 Shared Component Infrastructure Technical Interoperability Model
http://www.smart.gov/awg/documents/SCItechnicalIOmodel.pdf

[SCI Trust]   HSPD-12 Shared Component Infrastructure Trust Model
http://www.smart.gov/awg/documents/SCItrustModel.pdf

[SC PACS]   Technical Implementation Guidance: Smart Card Enabled Physical Access Control Systems version 2.3
http://www.smart.gov/iab/documents/PACS.pdf

[WS-Security]   Web Services Security: SOAP Message Security 1.1 (WS-SECURITY 2004), OASIS Standard Specification, 1 February 2006
http://www.oasis-open.org/committees/download.php/16790/wss-v1.1-spec-os-SOAPMessageSecurity.pdf

[WS-SWA]   Web Services Security SOAP Messages with Attachments (SwA) Profile 1.1; OASIS Standard, 1 February 2006
http://www.oasis-open.org/committees/download.php/16672/wss-v1.1-spec-os-SwAProfile.pdf

[XML Datatypes]   XML Schema Part 2: Datatypes Second Edition, W3C
http://www.w3.org/TR/xmlschema-2

Topic	Link
SOAP	http://schemas.xmlsoap.org/soap/envelope http://schemas.xmlsoap.org/soap/encoding http://www.w3.org/TR/SOAP-attachments
WSDL	http://www.w3.org/2002/ws/desc/
XML	http://www.w3.org/1999/XMLSchema-instance http://www.w3.org/1999/XMLSchema

2 Data Elements and Structures

Transaction datatypes are as follows:
> 1. The "xs:" prefix indicates an XML datatype in accordance with [XML Datatypes]
> 2. "swa:swaRef" indicates a reference to a SOAP attachment in accordance with [WS-SWA]

All transactions (ESP requests and SIP responses) are SOAP-wrapped XML messages sent over HTTPS. In accordance with [WS-Security]:
> 1. For every message, the sender digitally signs the SOAP body (including any attachments), and the receiver uses the digital signature to determine if tampering has occurred; and
> 2. For every message that contains PII, the sender encrypts, and the receiver decrypts, the SOAP body (including any attachments).
>   a. The sender randomly generates a symmetric key for that message only. The sender encrypts the SOAP body with the generated key prior to submitting the message to the recipient. The sender then encrypts the randomly generated key using the recipient's public key, and adds it to the SOAP Header. Upon receiving the encrypted message, the recipient uses its private key to decrypt the key in the SOAP header, and uses that obtained key to decrypt the SOAP body.

The constraints column indicates whether the field must be present with a value. This pertains to request transactions made by the agency system. All response transactions from the SIP must return all fields. Table 3-1 specifies which data structures are required (or optional) per transaction request and response.

2.1 Transaction Header

Field	Description	Datatype	Constraints
TransactionID	Unique identifier specific to a transaction request/response pair Supports tracking, auditing, and billing as necessary	xs:string	Required <=256 characters For request transaction, sender must generate a unique value. To avoid collision with Transaction IDs of other senders, generated value must include the sending system's unique identifier assigned by the SCI Governing Authority For corresponding response transaction, sender must use the TransactionID received in the request transaction
TransactionOrganizationalIdentifier	Organizational Identifier (OI) of the organization sending the transaction	xs:string	Required if available (i.e., may not be available for contractor-run system) 4 characters Valid Values: [NIST 800-87] organization codes
SystemID	Unique identifier of the system (e.g., agency HR system, SIP, enrollment station) sending the transaction	xs:string	Required <=256 characters Value must be the sending system's unique identifier assigned by the SCI Governing Authority
TransactionTimeStamp	The date and time the transaction was sent (e.g., 2002-10-10T12:00:00-05:00)	xs:dateTime	Required 25 characters Format: yyyy-mm-ddThh:mm:ss-timezone

2.2 Reservation Number

Field	Description	Datatype	Constraints
ReservationNumber	Unique number presented by the applicant to begin enrollment processing The enrollment station uses the SIP identifier portion of the Reservation Number (left of the hyphen) to know which SIP to contact for the applicant	xs:string	Required <=64 characters Format: unique identifier assigned to the SIP by the SCI Governing Authority, followed by a hyphen, followed by a number unique within the SIP itself

2.3 Person Identifier

Field	Description	Datatype	Constraints
SponsorOrganizationalIdentifier	Organizational Identifier (OI) of sponsoring agency This field combined with PersonIdentifier uniquely identifies a person	xs:string	Required 4 characters Valid Values: [NIST 800-87] organization codes Value must match what will be in the applicant's PIV card FASC-N OI field [SC PACS]
PersonIdentifier	Person Identifier (PI) code of the applicant This field combined with SponsorOrganizationalIdentifier uniquely identifies person	xs:string	Required <=256 characters Value must match what will be in the applicant's PIV card FASC-N PI field [SC PACS]

2.4 Personal Information

Field	Description	Datatype	Constraints
FirstName	Applicant's first name	xs:string	Required <=256 characters
MiddleName	Applicant's middle name	xs:string	Required <=256 characters
LastName	Applicant's last name	xs:string	Required <=256 characters
Suffix	Applicant's suffix (e.g., Jr, Sr)	xs:string	Required <=32 characters
DateofBirth	Applicant's Date of Birth	xs:date	Required 10 characters Format: yyyy-mm-dd
SSN	Applicant's social security number (e.g., 123456789)	xs:string	Required if TaxID and ForeignID are not present; otherwise optional 9 digits, no hyphenation
TaxID	Applicant's federal tax ID (e.g., 123456789)	xs:string	Required if SSN and ForeignID are not present; otherwise optional 9 digits, no hyphenation
ForeignID	Applicant's foreign national ID	xs:string	Required if SSN and TaxID are not present; otherwise optional <=32 characters no hyphenation
Gender	Applicant's gender	xs:string	Required 1 character Valid Values: M – male F – female
PrimaryIdentifierCountryCode	Country code of the country listed in the primary identifying source	xs:string	Required 2 characters Country code per [FIPS 10-4]
SecondaryIdentifier	Passport ID as a secondary identifier	xs:string	Required if PrimaryIdentifierCountryCode is not US <=32 characters

Field	Description	Datatype	Constraints
SecondaryIdentifierCountryCode	Country code of the country listed in the secondary identifying source	xs:string	Required if PrimaryIdentifierCountryCode is not US 2 characters Country code per [FIPS 10-4]

2.5 Sponsorship Information

Field	Description	Datatype	Constraints
PersonOrganizationAssociationCategory	Human-readable affiliation (e.g., Employee, Contractor)	xs:string	Required <=256 characters Value must be derived from Person/Organization Association (POA) code to be placed in the FASC-N POA field; use text from the POA code/text mapping [SC PACS]
FederalEmergencyResponseOfficialFlag	Indicates whether Applicant is a federal emergency response official	xs:boolean	Optional 1 character Valid Values: true false
DateofSponsorship	Date sponsorship began for the applicant	xs:date	Required 10 characters Format: yyyy-mm-dd
AffiliationBeginDate	Date affiliation begins with this agency	xs:date	Required 10 characters Format: yyyy-mm-dd
AffiliationExpectedEndDate	Date affiliation is expected to end with this agency – represents a "no later than" on credential expiration	xs:date	Required 10 characters Format: yyyy-mm-dd

Field	Description	Datatype	Constraints
AffiliationSeparationReasonCode	Indicates the reason for affiliation separation	xs:int	Required if affiliation has been separated Valid Values: 1 – termination 2 – resignation 3 – transfer 4 – death
AffiliationSeparationDate	Date of affiliation separation	xs:date	Required if AffiliationSeparationReasonCode is 1, 2, 3, or 4 10 characters Format: yyyy-mm-dd
SponsorFirstName	First name of applicant's sponsor	xs:string	Required <=256 characters
SponsorMiddleName	Middle name of applicant's sponsor	xs:string	Required <=256 characters
SponsorLastName	Last name of applicant's sponsor	xs:string	Required <=256 characters

2.6 I-9 Document Information

Field	Description	Datatype	Constraints
I9Document1Type	Human-readable type of first I-9 document presented (e.g., Maryland State ID, VA Drivers License, U.S. Passport)	xs:string	Required <=256 characters
I9Document1Issuer	Human-readable first I-9 document Issuer (e.g., State Department, State of X Dept of Y, County-Issued)	xs:string	Required <=256 characters
I9Document1IDNumber	Unique ID number from the identity document	xs:string	Required <=256 characters
I9Document1Image	Joint Photographic Experts Group (JPEG) image of document	swa:swaRef	Required
I9Document1Results	Authenticity score specified by the document verifier device	xs:string	Required <=256 characters

Field	Description	Datatype	Constraints
I9Document2Type	Human-readable type of second I-9 document presented (e.g., Maryland State ID, VA Drivers License, U.S. Passport)	xs:string	Required <=256 characters
I9Document2Issuer	Human-readable second I-9 document Issuer (e.g., State Department, State of X Dept of Y, County-Issued)	xs:string	Required <=256 characters
I9Document2IDNumber	Unique ID number from the identity document	xs:string	Required <=256 characters
I9Document2Image	JPEG image of document	swa:swaRef	Required
I9Document2Results	Authenticity score specified by the document verifier device	xs:string	Required <=256 characters

2.7 Photograph Information

Field	Description	Datatype	Constraints
FacialImage	Applicant's picture in binary format	swa:swaRef	Required

2.8 Fingerprint Information

Field	Description	Datatype	Constraints
EFTSData	Data (in binary format) for OPM/FBI to conduct applicant investigation	swa:swaRef	Required Formatted per [EFTS]
INCITS381	Images (in binary format) for Agency Records in InterNational Committee for Information Technology Standard (INCITS) 381 format [FINGSTD]	swa:swaRef	Required
PrimaryFingerDesignation	Designation of finger used for primary fingerprint.	xs:string	Required 2 characters Should be Right index finger unless not available. Per the FGP field in [EFTS], Appendix C Valid Values: 00-10 – for the 10 fingers XX – for amputated UP – for unprintable

Field	Description	Datatype	Constraints
SecondaryFingerDesignation	Designation of finger used for secondary fingerprint.	xs:string	Required 2 characters Should be Left index finger unless not available. Per the FGP field in [EFTS] Appendix C Valid Values: 00-10 – for the 10 fingers XX –for amputated UP – for unprintable
PrimaryFingerprintMinutia1	Minutia (in binary format) computed per scheme #1 in INCITS 378 format [MINUSTD]	swa:swaRef	Required
PrimaryFingerprintMinutia2	Minutia (in binary format) computed per scheme #2 in INCITS 378 format [MINUSTD]	swa:swaRef	Required
SecondaryFingerprintMinutia1	Minutia (in binary format) computed per scheme #1 in INCITS 378 format [MINUSTD]	swa:swaRef	Required
SecondaryFingerprintMinutia2	Minutia (in binary format) computed per scheme #2 in INCITS 378 format [MINUSTD]	swa:swaRef	Required

2.9 Enrollment Package Information

Field	Description	Datatype	Constraints
DocVerifierType	Human-readable description of document verifier equipment used, if any	xs:string	Optional <=256 characters
CameraType	Human-readable description of camera type that should include camera make and model	xs:string	Optional <=256 characters
FingerprintEquipment	FBI 3-part formatting "IMA[1]" for equipment	xs:string	Optional <=256 characters

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1 Per [EFTS], *"This free -text field…is a grouped field, comprised of three subfields: the Make (MAK), Model (MODL), and Serial Number (SERNO) of the acquisition device..."*

Field	Description	Datatype	Constraints
RegistrarOrganizationalIdentifier	The Organizational Identifier (OI) of the agency for whom the Enrollment Officer works	xs:string	Required 4 characters Valid Values: [NIST 800-87] organization codes
EnrollmentOfficerPersonIdentifier	Person Identifier (PI) code of the Enrollment Officer This field identifies the Enrollment Officer who conducted the enrollment	xs :string	Required <=256 characters Value must be the Enrollment Officer's PIV card FASC-N PI [SC PACS]
EnrollmentStartTimeStamp	Timestamp at enrollment station of receipt of enrollment authorization from the SIP (i.e., receive EnrollmentAuthLookupResult) (e.g., 2002-10-10T12:00:00-05:00)	xs:dateTime	Required 25 characters Format: yyyy-mm-ddThh:mm:ss-timezone
EnrollmentEndTimeStamp	Timestamp of Enrollment Officer digitally signing the enrollment package (e.g., 2002-10-10T12:00:00-05:00)	xs:dateTime	Required 10 characters Format: yyyy-mm-ddThh:mm:ss-timezone
ProcessStatusCode	Indicates whether enrollment was successful or not Successful enrollment is identity proofing that confirms the person is the correct applicant per the Reservation Number, and uploading of a complete enrollment package to the SIP	xs:int	Required Valid Values: 1 - Enrollment successfully completed 2 - Enrollment failed: applicant failed I-9 proofing 3 - Enrollment failed: applicant failed biometrics cross check 4 – Enrollment failed: other reason
EnrollmentStatusMessage	Additional information about the enrollment	xs:string	Optional <=256 characters

2.10 Enrollment Package Receipt

Field	Description	Datatype	Constraints
EnrollmentEndTimeStamp	Value of EnrollmentEndTimeStamp from corresponding EnrollmentPackage transaction (e.g., 2002-10-10T12:00:00-05:00) Can be used by Enrollment Officer to verify SIP processing of correct enrollment package	xs:dateTime	Required 25 characters Format: yyyy-mm-ddThh:mm:ss-timezone

2.11 Transaction Status

Field	Description	Datatype	Constraints
StatusCode	Status code indicating whether transaction was processed successfully or not	xs:string	Required Valid Values: Success Failure
StatusMessage	Human-readable message to provide additional information	xs:string	Required

3 Transaction/Message Content Summary

This section provides a high-level summary of each transaction. Section 4, Technical Specifications, provides complete transaction detail in XML format. Tags must be created, and the interface incorporated into a Web Services Description Language (WSDL). The ESP initiates all transactions to the SIP. Sending enrollment package (i.e., enrollment data) to the SIP for a specified applicant causes the SIP to update its record for that applicant (i.e., adds, changes, deletes information as necessary). Table 3-1 summarizes each enrollment transaction in terms of the data structures defined in Section 2, Data Elements and Structures.

Table 3-1: Transaction Content Summary

Transaction	ESP to SIP (REQUEST)	SIP to ESP (RESPONSE)

Lookup Applicant Enrollment Eligibility
 	
EnrollmentAuthLookup
EnrollmentAuthLookupResult
	o Transaction Header (required)
	o Reservation Number (required)
	
	o Digitally signed
		o Transaction Header (required)
		o Person Identifier (required if authorized to enroll)
		o Personal Information (required if authorized to enroll)
		o Sponsorship Information (required if authorized to enroll)
		o I-9 Document Information (required if authorized to enroll and information is available)
		o Photograph Information (required if authorized to enroll and information is available)
		o Fingerprint Information (required if authorized to enroll and information is available)
		o Transaction Status (required)
		
		o Digitally signed and encrypted
		
		o Partial List of Status Messages:
		   - authorized to enroll
		   - not authorized to enroll
		   - invalid reservation number

Send Enrollment Package
 	
EnrollmentPackage
EnrollmentPackageResponse
	o Transaction Header (required)
	o Person Identifier (required)
	o I-9 Document Information (required)
	o Photograph Information (required)
	o Fingerprint Information (required)
	o Enrollment Package Information (required)
	
	o Digitally signed and encrypted
		o Transaction Header (required)
		o Enrollment Package Receipt (required)
		o Transaction Status (required)
		
		o Digitally signed
		
		o Partial List of Status Messages:
		   - record updated
		   - update failed

4 Technical Specifications

The following are sample XML transactions that are summarized in Sections 2 and 3.

4.1 XML Schema Definition: CommonElements

See [Common Elements].

4.2 XML Schema Definition: HSPD12Enrollment

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:hspd12="http://hspd12.gsa.gov/federated/enrollment"
elementFormDefault="qualified" attributeFormDefault="unqualified">
        <xs:import namespace="http://hspd12.gsa.gov/federated/enrollment"
schemaLocation="CombinedSchema.1.0.xsd"/>
        <xs:complexType name="EnrollmentPackageInformationType">
                <xs:sequence>
                        <xs:element name="DocVerifierType" minOccurs="0">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                                <xs:maxLength value="256"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="CameraType" minOccurs="0">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                                <xs:maxLength value="256"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="FingerprintEquipment" minOccurs="0">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                                <xs:maxLength value="256"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="RegistrarOrganizationalIdentifier"
type="hspd12:OrganizationalIdentifierType"/>
                        <xs:element name="EnrollmentOfficerPersonIdentifier">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                                <xs:maxLength value="256"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="EnrollmentStartTimeStamp"
type="xs:dateTime"/>
                        <xs:element name="EnrollmentEndTimeStamp"
type="xs:dateTime"/>
                        <xs:element name="ProcessStatusCode">
                                <xs:simpleType>
                                        <xs:restriction base="xs:int">
                                                <xs:enumeration value="1">
                                                        <xs:annotation>

        <xs:documentation>Enrollment successfully  completed
</xs:documentation>
                                                        </xs:annotation>
                                                </xs:enumeration>
```

```
                                                    <xs:enumeration value="2">
                                                        <xs:annotation>

        <xs:documentation>Enrollment failed: applicant failed I-9 proofing
</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:enumeration>
                                                    <xs:enumeration value="3">
                                                        <xs:annotation>

        <xs:documentation>Enrollment failed: applicant failed biometrics cross
check
</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:enumeration>
                                                    <xs:enumeration value="4">
                                                        <xs:annotation>

        <xs:documentation>Enrollment failed: other reason</xs:documentation>
                                                        </xs:annotation>
                                                    </xs:enumeration>
                                                </xs:restriction>
                                        </xs:simpleType>
                                </xs:element>
                                <xs:element name="EnrollmentStatusMessage" minOccurs="0">
                                        <xs:simpleType>
                                                <xs:restriction base="xs:string">
                                                        <xs:maxLength value="256"/>
                                                </xs:restriction>
                                        </xs:simpleType>
                                </xs:element>
                        </xs:sequence>
                </xs:complexType>
        <xs:simpleType name="EnrollmentPackageReceiptType">
                <xs:annotation>
                        <xs:documentation>Value of EnrollmentEndTimeStamp from
corresponding EnrollmentPackage transaction</xs:documentation>
                </xs:annotation>
                <xs:restriction base="xs:dateTime"/>
        </xs:simpleType>
        <xs:element name="EnrollmentAuthLookup">
                <xs:complexType>
                        <xs:sequence>
                                <xs:element name="TransactionHeader"
type="hspd12:TransactionHeaderType"/>
                                <xs:element name="ReservationNumber"
type="hspd12:ReservationNumberType"/>
                        </xs:sequence>
                </xs:complexType>
        </xs:element>
        <xs:element name="EnrollmentAuthLookupResult">
                <xs:complexType>
                        <xs:sequence>
                                <xs:element name="TransactionHeader"
type="hspd12:TransactionHeaderType"/>
                                <xs:element name="PersonIdentifier"
type="hspd12:PersonIdentifierType" minOccurs="0"/>
                                <xs:element name="PersonalInformation"
type="hspd12:PersonalInformationType" minOccurs="0"/>
                                <xs:element name="SponsorshipInformation"
type="hspd12:SponsorshipInformationType" minOccurs="0"/>
                                <xs:element name="I-9DocumentInformation"
type="hspd12:I-9DocumentType" minOccurs="0"/>
                                <xs:element name="PhotographInformation"
type="hspd12:PhotographInformationType" minOccurs="0"/>
```

```
                        <xs:element name="FingerprintInformation"
type="hspd12:FingerprintInformationType" minOccurs="0"/>
                        <xs:element name="TransactionStatus"
type="hspd12:TransactionStatusType"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="EnrollmentPackage">
            <xs:complexType>
                <xs:sequence>
                    <xs:element name="TransactionHeader"
type="hspd12:TransactionHeaderType"/>
                    <xs:element name="PersonIdentifier"
type="hspd12:PersonIdentifierType"/>
                    <xs:element name="I-9DocumentInformation"
type="hspd12:I-9DocumentType"/>
                    <xs:element name="PhotographInformation"
type="hspd12:PhotographInformationType"/>
                    <xs:element name="FingerprintInformation"
type="hspd12:FingerprintInformationType"/>
                    <xs:element name="EnrollmentPackageInformation"
type="EnrollmentPackageInformationType"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="EnrollmentPackageResponse">
            <xs:complexType>
                <xs:sequence>
                    <xs:element name="TransactionHeader"
type="hspd12:TransactionHeaderType"/>
                    <xs:element name="EnrollmentPackageReceipt"
type="EnrollmentPackageReceiptType"/>
                    <xs:element name="TransactionStatus"
type="hspd12:TransactionStatusType"/>
                </xs:sequence>
            </xs:complexType>
        </xs:element>
</xs:schema>
```

4.3 EnrollmentAuthLookup

This transaction is used to request applicant enrollment eligibility status, and to obtain available applicant information. Reservation Number drives the request. The following schema fragment defines this transaction:

```
<?xml version="1.0" encoding="UTF-8"?>
<EnrollmentAuthLookup xsi:noNamespaceSchemaLocation="ESPtoSIP.xsd"
xmlns:hspd12="http://hspd12.gsa.gov/federated/enrollment"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <TransactionHeader>
        <hspd12:TransactionID>BKSKSKS-2</hspd12:TransactionID>

    <hspd12:TransactionOrganizationalIdentifier>0000</hspd12:TransactionOrgan
izationalIdentifier>
        <hspd12:SystemID>732372727</hspd12:SystemID>
        <hspd12:TransactionTimeStamp>2001-12-
17T09:30:47.0Z</hspd12:TransactionTimeStamp>
    </TransactionHeader>
    <ReservationNumber>99882828282</ReservationNumber>
</EnrollmentAuthLookup>
```

4.4 EnrollmentAuthLookupResult

This transaction returns applicant enrollment eligibility status, and any available applicant information. The following schema fragment defines this transaction:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EnrollmentAuthLookupResult xsi:noNamespaceSchemaLocation="ESPtoSIP.xsd"
xmlns:hspd12="http://hspd12.gsa.gov/federated/enrollment"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <TransactionHeader>
                <hspd12:TransactionID>BLSLSLS-2</hspd12:TransactionID>

        <hspd12:TransactionOrganizationalIdentifier>0000</hspd12:TransactionOrgan
izationalIdentifier>
                <hspd12:SystemID>22727272</hspd12:SystemID>
                <hspd12:TransactionTimeStamp>2001-12-
17T09:30:47.0Z</hspd12:TransactionTimeStamp>
        </TransactionHeader>
        <PersonIdentifier>

        <hspd12:SponsorshipOrganizationalIdentifier>0000</hspd12:SponsorshipOrgan
izationalIdentifier>
                <hspd12:PersonIdentifier>PersonID</hspd12:PersonIdentifier>
        </PersonIdentifier>
        <PersonalInformation>
                <hspd12:FirstName>Odell</hspd12:FirstName>
                <hspd12:MiddleName>A</hspd12:MiddleName>
                <hspd12:LastName>Robertson</hspd12:LastName>
                <hspd12:Suffix>II</hspd12:Suffix>
                <hspd12:DateOfBirth>1967-08-13</hspd12:DateOfBirth>
                <hspd12:SSN>111111111</hspd12:SSN>
                <hspd12:TaxID>222222222</hspd12:TaxID>
                <hspd12:ForeignID>ForeignID</hspd12:ForeignID>
                <hspd12:Gender>M</hspd12:Gender>

        <hspd12:PrimaryIdentifierCountryCode>AA</hspd12:PrimaryIdentifierCountryC
ode>

        <hspd12:SecondaryIdentifier>SecondaryID</hspd12:SecondaryIdentifier>

        <hspd12:SecondaryIdentifierCountryCode>AA</hspd12:SecondaryIdentifierCoun
tryCode>
        </PersonalInformation>
        <SponsorshipInformation>

        <hspd12:PersonOrganizationAssociationCategory>Contractor</hspd12:PersonOr
ganizationAssociationCategory>

        <hspd12:FederalEmergencyResponseOfficialFlag>true</hspd12:FederalEmergenc
yResponseOfficialFlag>
                <hspd12:DateofSponsorship>1967-08-13</hspd12:DateofSponsorship>
                <hspd12:AffiliationBeginDate>1967-08-
13</hspd12:AffiliationBeginDate>
                <hspd12:AffiliationExpectedEndDate>1967-08-
13</hspd12:AffiliationExpectedEndDate>

        <hspd12:AffiliationSeparationReasonCode>1</hspd12:AffiliationSeparationRe
asonCode>
                <hspd12:AffiliationSeparationDate>1967-08-
13</hspd12:AffiliationSeparationDate>
                <hspd12:SponserFirstName>Terrence</hspd12:SponserFirstName>
                <hspd12:SponsorMiddleName>L</hspd12:SponsorMiddleName>
                <hspd12:SponsorLastName>Harrellson</hspd12:SponsorLastName>
        </SponsorshipInformation>
```

```
        <I-9DocumentInformation>
                <hspd12:I9Document1Type>Maryland ID</hspd12:I9Document1Type>
                <hspd12:I9Document1Issuer>State of
Maryland</hspd12:I9Document1Issuer>
                <hspd12:I9Document1IDNumber>234</hspd12:I9Document1IDNumber>

        <hspd12:I9Document1Image>http://www.altova.com</hspd12:I9Document1Image>
                <hspd12:I9Document1Results>43</hspd12:I9Document1Results>
                <hspd12:I9Document2Type>Virginia ID</hspd12:I9Document2Type>
                <hspd12:I9Document2Issuer>State of
Virginia</hspd12:I9Document2Issuer>
                <hspd12:I9Document2IDNumber>543345</hspd12:I9Document2IDNumber>

        <hspd12:I9Document2Image>http://www.altova.com</hspd12:I9Document2Image>
                <hspd12:I9Document2Results>12</hspd12:I9Document2Results>
        </I-9DocumentInformation>
        <PhotographInformation>http://www.altova.com</PhotographInformation>
        <FingerprintInformation>
                <hspd12:EFTSData>http://www.altova.com</hspd12:EFTSData>
                <hspd12:INCITS381>http://www.altova.com</hspd12:INCITS381>

        <hspd12:PrimaryFingerDesignation>01</hspd12:PrimaryFingerDesignation>

        <hspd12:SecondaryFingerDesignation>01</hspd12:SecondaryFingerDesignation>

        <hspd12:PrimaryFingerprintMinutia1>http://www.altova.com</hspd12:PrimaryF
ingerprintMinutia1>

        <hspd12:PrimaryFingerprintMinutia2>http://www.altova.com</hspd12:PrimaryF
ingerprintMinutia2>

        <hspd12:SecondaryFingerprintMinutia1>http://www.altova.com</hspd12:Second
aryFingerprintMinutia1>

        <hspd12:SecondaryFingerprintMinutia2>http://www.altova.com</hspd12:Second
aryFingerprintMinutia2>
        </FingerprintInformation>
        <TransactionStatus>
                <hspd12:StatusCode>Success</hspd12:StatusCode>
                <hspd12:StatusMessage>Status Message</hspd12:StatusMessage>
        </TransactionStatus>
</EnrollmentAuthLookupResult>
```

4.5 EnrollmentPackage

This transaction submits enrollment information (obtained during the current enrollment process) to the SIP. The following schema fragment defines this transaction:

```
<?xml version="1.0" encoding="UTF-8"?>
<EnrollmentPackage xsi:noNamespaceSchemaLocation="ESPtoSIP.xsd"
xmlns:hspd12="http://hspd12.gsa.gov/federated/enrollment"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <TransactionHeader>
                <hspd12:TransactionID>BKISKSKSKS-23</hspd12:TransactionID>

        <hspd12:TransactionOrganizationalIdentifier>0000</hspd12:TransactionOrgan
izationalIdentifier>
                <hspd12:SystemID>83838383</hspd12:SystemID>
                <hspd12:TransactionTimeStamp>2001-12-
17T09:30:47.0Z</hspd12:TransactionTimeStamp>
        </TransactionHeader>
        <PersonIdentifier>
```

```
        <hspd12:SponsorshipOrganizationalIdentifier>0000</hspd12:SponsorshipOrgan
izationalIdentifier>
        <hspd12:PersonIdentifier>PersonID</hspd12:PersonIdentifier>
    </PersonIdentifier>
    <I-9DocumentInformation>
        <hspd12:I9Document1Type>California Drivers
License</hspd12:I9Document1Type>
        <hspd12:I9Document1Issuer>State of
California</hspd12:I9Document1Issuer>

    <hspd12:I9Document1IDNumber>23432343232</hspd12:I9Document1IDNumber>

    <hspd12:I9Document1Image>http://www.altova.com</hspd12:I9Document1Image>
        <hspd12:I9Document1Results>12</hspd12:I9Document1Results>
        <hspd12:I9Document2Type>Passport</hspd12:I9Document2Type>
        <hspd12:I9Document2Issuer>State
Department</hspd12:I9Document2Issuer>
        <hspd12:I9Document2IDNumber>234543343</hspd12:I9Document2IDNumber>

    <hspd12:I9Document2Image>http://www.altova.com</hspd12:I9Document2Image>
        <hspd12:I9Document2Results>39</hspd12:I9Document2Results>
    </I-9DocumentInformation>
    <PhotographInformation>http://www.altova.com</PhotographInformation>
    <FingerprintInformation>
        <hspd12:EFTSData>http://www.altova.com</hspd12:EFTSData>
        <hspd12:INCITS381>http://www.altova.com</hspd12:INCITS381>

    <hspd12:PrimaryFingerDesignation>01</hspd12:PrimaryFingerDesignation>

    <hspd12:SecondaryFingerDesignation>01</hspd12:SecondaryFingerDesignation>

    <hspd12:PrimaryFingerprintMinutia1>http://www.altova.com</hspd12:PrimaryF
ingerprintMinutia1>

    <hspd12:PrimaryFingerprintMinutia2>http://www.altova.com</hspd12:PrimaryF
ingerprintMinutia2>

    <hspd12:SecondaryFingerprintMinutia1>http://www.altova.com</hspd12:Second
aryFingerprintMinutia1>

    <hspd12:SecondaryFingerprintMinutia2>http://www.altova.com</hspd12:Second
aryFingerprintMinutia2>
    </FingerprintInformation>
    <EnrollmentPackageInformation>
        <DocVerifierType>VerifierType</DocVerifierType>
        <CameraType>Camera-12121</CameraType>
        <FingerprintEquipment>XX-1</FingerprintEquipment>

    <RegistrarOrganizationalIdentifier>0000</RegistrarOrganizationalIdentifie
r>

    <EnrollmentOfficerPersonIdentifier>PersonId</EnrollmentOfficerPersonIdent
ifier>
        <EnrollmentStartTimeStamp>2001-12-
17T09:30:47.0Z</EnrollmentStartTimeStamp>
        <EnrollmentEndTimeStamp>2001-12-
17T09:30:47.0Z</EnrollmentEndTimeStamp>
        <ProcessStatusCode>1</ProcessStatusCode>
        <EnrollmentStatusMessage>Status Message</EnrollmentStatusMessage>
    </EnrollmentPackageInformation>
</EnrollmentPackage>
```

4.6 EnrollmentPackageResponse

This transaction specifies whether the SIP was successful or not in updating its records with the enrollment information submitted to it. The following schema fragment defines this transaction:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<EnrollmentPackageResponse xsi:noNamespaceSchemaLocation="ESPtoSIP.xsd"
xmlns:hspd12="http://hspd12.gsa.gov/federated/enrollment"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
        <TransactionHeader>
                <hspd12:TransactionID>BBISIIS-3</hspd12:TransactionID>

        <hspd12:TransactionOrganizationalIdentifier>0000</hspd12:TransactionOrgan
izationalIdentifier>
                <hspd12:SystemID>23456787654</hspd12:SystemID>
                <hspd12:TransactionTimeStamp>2001-12-
17T09:30:47.0Z</hspd12:TransactionTimeStamp>
        </TransactionHeader>
        <EnrollmentPackageReceipt>2001-12-
17T09:30:47.0Z</EnrollmentPackageReceipt>
        <TransactionStatus>
                <hspd12:StatusCode>Success</hspd12:StatusCode>
                <hspd12:StatusMessage>StatusMessage</hspd12:StatusMessage>
        </TransactionStatus>
</EnrollmentPackageResponse>
```

Appendix A: Glossary & Acronyms

Term	Description
Adjudication	The final decision as to any employee's suitability for employment, either as a government employee or contractor, exclusively determined by the agency's adjudication authority, using at a minimum the results of the: (a) NACI, and (b) FBI National Criminal History Check.
Applicant	Individual seeking a PIV card.
Business Use Case	A business use case is a simple generalization that captures user intentions in a technology and implementation independent manner. It captures all behavioral aspects that have cross-enterprise business significance. This allows each participant to understand and plan for conformance to the business protocol, and to establish the necessary cross-enterprise automated business processes.
Enrollment	An applicant to whom an identity credential is to be issued provides supporting enrollment documentation for claimed identity (i.e., enrollment establishes that the individual present matches the supporting documents). Enrollment delivers a secured enrollment package to the SIP for agency adjudication. There are two enrollment scenarios: • Initial Enrollment – an applicant's first ever enrollment, evidenced by no enrollment package for the applicant yet residing at the SIP; • Re-enrollment – all enrollments where an enrollment package for the applicant already resides at the SIP. Re-enrollment may occur for many reasons including, but not limited to PIV card renewal, PIV card reissuance.
Enrollment Package	Source documents (e.g., I-9 documents) and/or biometrics (e.g. photograph, fingerprints) collected from an applicant at an enrollment station as part of identity proofing.
Extensible Markup Language (XML)	Specification developed by the W3C. XML is a pared-down version of SGML, designed especially for Web documents. It allows designers to create their own customized tags, enabling the definition, transmission, validation, and interpretation of data between applications and between organizations.
HyperText Transfer Protocol, Secure (HTTPS)	The protocol for accessing a secure Web server. Using HTTPS in the URL instead of HTTP directs the message to a secure port number rather than the default Web port number of 80. The session is then managed by a security protocol such as Secure Socket Layer (SSL).
I-9	Federal government Employment Eligibility Verification form. All U.S. employers are responsible for completion and retention of Form I-9 for each individual they hire for employment in the United States. This includes citizens and non-citizens. On the form, the employer must verify the employment eligibility and identity documents presented by the employee and record the document information on the Form I-9.
Minutia	In fingerprinting terms, are the points of interest in a fingerprint, such as bifurcations (a ridge splitting into two) and ridge endings.

Term	Description
National Agency Check (NAC)	An integral part of all background investigations, consisting of searches of the OPM *Security/Suitability Investigations Index (SII)*, the *Defense Clearance and Investigations Index (DCII)*, the Federal Bureau of Investigation (FBI) Identification Division's name and fingerprint files, and other files or indices.
National Agency Check with Written Inquiries (NACI)	The basic and minimum investigation required on all new Federal employees consisting of a NAC with written inquiries and searches of records covering specific areas of an individual's background during the past five years (inquiries sent to current and past employers, schools attended, references, and local law enforcement authorities). Coverage includes: – Employment, 5 years – Education, 5 years and highest degree verified – Residence, 3 years – References – Law Enforcement, 5 years – NACs
SOAP	Lightweight XML-based messaging protocol used to encode the information in Web service request and response messages before sending them over a network. It consists of three parts: an envelope that defines a framework for describing what is in a message and how to process it, a set of encoding rules for expressing instances of application-defined data types, and a convention for representing remote procedure calls and responses. SOAP messages are independent of any operating system or protocol and may be transported using a variety of Internet protocols, including MIME and HTTP.
Sponsorship	An agency-authorized individual substantiates the need for a PIV credential to be issued to an individual (i.e, employee, contractor), and provides sponsorship to the individual. The PIV Sponsor requests the issuance of a PIV credential to the individual, who is then considered and applicant.
Suitability	Suitability is not about job skills, but rather is about lack of criminal history, an upstanding character, and an evidenced loyalty to the United States. These determinations come out in the background investigation. Suitability is in addition to proving who an individual is. The NACI or higher, helps agencies make this suitability determination regardless of their job skills that come out in the interviews and resume. The final decision as to any employee's suitability for employment, as either a government employee or contractor, is exclusively with the agency's adjudication authority. At a minimum, the following results are needed to adjudicate: ▪ NACI; and ▪ FBI National Criminal History Check
Web Services Description Language (WSDL)	An XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint. Related concrete endpoints are combined into abstract endpoints (services). WSDL is extensible to allow description of endpoints and their messages regardless of what message formats or network protocols are used to communicate

Term	Description
WS-Security	Standard that addresses data exchange security as part of a Web service. Specifically, WS-Security is a mechanism for adding security information into SOAP messages. SOAP provides a flexible technique for structuring messages, but it does not directly address how to secure the messages.

Acronym	Abbreviation For
EFTS	Electronic Fingerprint Transmission Specification
ESP	Enrollment Service Provider
FASC-N	Federal Agency Smart Credential Number
FBI	Federal Bureau of Investigation
FIPS	Federal Information Processing Standards
HSPD-12	Homeland Security Presidential Directive-12
HTTPS	Hypertext Transfer Protocol Secure
INCITS	InterNational Committee for Information Technology Standards
IT	Information Technology
JPEG	Joint Photographic Experts Group
NAC	National Agency Check
NACI	National Agency Check with Written Inquiries
NIST	National Institutes of Science and Technology
OI	Organizational Identifier
OPM	Office of Personnel Management
PI	Person Identifier
PII	Personally Identifiable Information
PIV	Personal Identity Verification
SIP	System Infrastructure Provider
SP	Special Publication
SwA	SOAP with Attachment
WSDL	Web Services Description Language
XML	Extensible Markup Language