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1 Introduction

1.1 Overview

This DoD Electronic Biometric Transmission Specification (EBTS) describes customizations of the American National Standards Institute/National Institute of Standards and Technology Information Technology Laboratory (ANSI/NIST-ITL) transactions that will be necessary to interface with the DoD Authoritative Biometrics Repository. The primary audience for this specification consists of software engineers who develop and/or support systems that interface with the DoD ABIS and any future biometric repository. Readers are expected to have working knowledge of the Federal Bureau of Investigation (FBI) EBTS and ANSI/NIST-ITL as a prerequisite for understanding this specification. The DoD's EBTS builds upon the ANSI/NIST-ITL and incorporates aspects of the FBI EBTS to meet DoD requirements via additions and customizations of the base data format.

The National Information Exchange Model (NIEM) is an Extensible Markup Language (XML) based standard for information exchange. The NIEM is a United States (US) government-sponsored initiative to facilitate information sharing within government organizations and their business partners. NIEM helps organizations meet the requirements of Homeland Security Presidential Directive (HSPD-5) 5: Management of Domestic Incidents, and associated Executive Orders. HSPD-5 directs the Department of Defense (DoD) to establish appropriate relationships and mechanisms for cooperation and coordination with other departments and agencies responsible for protecting national security.

The DoD Electronic Biometric Transmission Specification (EBTS) Information Exchange Package (IEP) is a collection of XML schemas, XML instance documents, and other information artifacts that document the rules governing the exchange of biometric information with the United States DoD. Biometrics is the automated recognition of individuals based on their behavioral and biological characteristics. The IEP will provide interoperability support to the following core biometric functions:

- **Collect** - Consists of capturing a biometric sample (such as facial image, fingerprint, or iris image) and related contextual data from an individual using a biometric collection capability.
- **Store** - The process of enrolling, maintaining, and updating biometric files to provide standardized, comprehensive, current biometric information on individuals.
- **Match** - Comparing a standardized biometric file to an existing source and scoring the level of confidence of the match.
- **Share** - The exchange of biometric files (biometric samples and contextual data) and match results.

The DoD EBTS 4.0 standard acts as the Information Exchange Package Documentation (IEPD), which describes the contents and use of all the artifacts included in the IEP. Not all artifacts are present in the package at this time, as they will be developed as part of the DFBA STB faceted release strategy.

- Information Exchange Package Documentation specification, or IEPD.
- Collection of XML Schemas, XML instances, and other documentation and artifacts that are the electronic representation of the rules governing an information exchange.
- To ensure interoperability, specific component requirements and constraints are determined on a per-exchange basis (in the IEPDs).
- Package includes everything needed to create a conformant information exchange.

1.2 New This Release

This release is the second NIEM IEP from the Defense Forensics and Biometrics Agency. The DoD EBTS v4.0 acts as the DoD-EBTS IEPD 2.0. The following section describes the major updates to the DoD EBTS artifacts contained within this IEPD.

1.2.1 ANSI NIST 2011 with Update 2013

The American National Standards Institute / National Institute of Standards and Technology International Technology Laboratories (ANSI/NIST-ITL 1-2011: Update 2013) standard [1]

provides the guidelines for the exchange of biometric information between various federal, state, local, tribal, and international systems. The 2013 update to the ANSI/NIST-ITL standard incorporates Record Type 11: Forensic and Investigatory Voice Supplement (ANSI/NIST-ITL 1-2011 Sup: Voice) directly into the text, as well as corrects miscellaneous errors that were noticed after publication of the 2011 version. The addition of Type 11 record and the updated additional record types associated with this version of the standard have been noted and merged into the DoD EBTS v4.0. The details of these changes are summarized in the table below. For ease of discussion, this standard is also referenced as the ITL 2013.

NIST Record	Summary of Changes
Type-1	Addition of a new field to signal when country code fields in the data for a transaction are specified according to GENC as opposed to the default ISO 3166-1.
Type-9	Addition of new fields to support the Extended Feature Set.
Type-10	Additional fields for cheiloscopic images, suspected patterned injuries, and capability to transmit extra-oral and intra-oral images. New fields containing subject information and capture organization data.
Type-11	A new record type introduced to handle forensic and investigatory voice data.
Type-13	Addition of new fields to support the forensic markups of friction ridge images. New fields containing subject information and capture organization data.
Type-14	New fields containing subject information and capture organization data. New capability to handle plain fingertip exemplars added.
Type-15	New fields containing subject information and capture organization data. New field to allow for segmentation of a full palm print.
Type-18	Addition of a field to allow cross reference to a particular Type-2 record associated with the DNA information in a particular instance of the Type-18 record.
Type-21	Addition of a new field to record information about medical devices found in or on a person that may be used to assist in identification of unknown deceased. New fields containing subject information and capture organization data.
Annex C	Establishment of the NIEM Biometrics Domain.
Annex G	Establishment of the NIEM Biometrics Domain and inclusion of the new fields and record types.

Figure 1: Summarized ANSI/NIST ITL 1-2011: Update 2013 Changes

1.2.2 NIEM Biometrics 3.2

The new release of NIEM Alpha 3.2 [2] included: model harmonization at both the core and domain level, refactoring of the core to remove and/or add content, incorporation of domain updates as driven by the communities of interest that govern them, and other architectural enhancements such as potential changes in the way NIEM manages code lists.

The NIEM core updates include:

- Incorporated elements previously contained in domain content.
- Modified existing definitions for data elements based on community input.
- Added substitution group placeholders for code lists, which makes plugging in updated code sets into information exchanges (e.g., IEPDs) much easier.
- Updated 33 code lists to ensure more timely and relevant data.

Key to the DoD EBTS IEPD 2.0, the NEIM Biometrics and Justice domains have submitted new and/or updated content for incorporation in NIEM 3.2.

1.2.3 Dual Binary and XML formats

This version of the DoD EBTS incorporates several new enhancements to facilitate the generation of transactions in either XML or legacy binary formats. This is a temporary enhancement intended to enable backward compatibility to legacy platforms and trading partners as they transition to an XML only framework. To maintain backwards compatibility, legacy transactions will be supported only as long as the lifecycle of previously purchased biometrics collection devices is active. All newly obtained systems to store/match/share biometrics shall conform to the mandated standards in the DoD Information Technology Standards Registry (DISR).

1.2.4 Geopolitical Entities, Names, and Codes (GENC)

On September 2, 2008, the U.S. Department of Commerce withdrew the Federal Information Processing Standards (FIPS) Publication 10-4, April 1995, Standard for Countries, Dependencies, Areas of Special Sovereignty, and their Principal Administrative Divisions (FIPS 10-4). The specifics of this action were announced in the U.S. Federal Register / Vol. 73, No. 170. FIPS 10-4 (plus

change notices) provided a list of the basic geopolitical entities in the world, together with the principal administrative divisions that constitute each entity. Each basic geopolitical entity was represented by a two-character, alphabetic "country code".

The newly incorporated Geopolitical Entities, Names, and Codes (GENC) Standard [3] now specifies an information model for representing names and codes of geopolitical entities and administrative subdivisions, with supporting information. A geopolitical entity is a region controlled by a political community having an organized government and possessing internal and external sovereignty, most often as a State but sometimes having a dependent relationship on another political authority, or a special sovereignty status. Geopolitical entities may be divided into administratively subordinate divisions.

A GENC code (or, synonymously, an ISO 3166 code element) for a geopolitical entity or administrative subdivision is a unique designation of that concept within a set of similar concepts established by a suitable authority. This information model is based on that of ISO 3166 but extended to capture additional information required by U.S. Government stakeholders [3]. In DoD EBTS v4.0 conformant transactions, geopolitical entities shall be represented via a three-character, alphabetic (Alpha-3) “country code.”

The GENC 3.0 Edition addresses enhancements in the following areas [3]:

- Revised to no longer directly reuse items (countries and country subdivisions) specified in ISO 3166 (Section 5: body text, logical data model, XML encoding schema).
- Revised to indicate end of use of ISO codespace identifiers for items included in the content of the GENC standard.
- Revised to reference the GENC Registry for the specification of all:
    - GENC codespace identifiers,
    - ISO 3166 codespace identifiers,
    - FIPS 10 through 10-4 codespace identifiers,
    - GEC codespace identifiers , and
    - STANAG 1059 codespace identifiers

- Added conformance requirements for non-GENC codespace identifiers (specified in Annex B) to Annex A
- Split former Annex B – Country Code Standards (Informative) into replacement Annex B – Country Code Standards and Codespaces (Normative) and new Annex C – Country Code Standard Logical Data Models and XML Encodings (Informative)
- Revised language throughout to better discriminate codespace (identifiers) from (content) baselines, and codes-for-names from codes-for-countries.
- Updated all UML and XSD schemas, as well as the content of corresponding examples.

1.2.5 ISO 636 Languages

With the inclusion of the ANSI/NIST Record Type-11, new considerations must be given to the new voice modality. One of these considerations is the addition of fields and new code lists to accommodate the recognition and/or translation of voice components languages.

ISO 639-3 [4] & [5] attempts to provide as complete an enumeration of languages as possible, including living, extinct, ancient, and constructed languages, whether major or minor, written or unwritten. ISO 639-3 is a code that aims to define three-letter identifiers for all known human languages.

1.2.6 FBI 10.0.3

Federal Bureau of Investigation's (FBI) Electronic Biometric Transaction Specification (EBTS) version 10.0 [6] and recent update 10.0.3 [7] defines the composition of records within a transaction that is transmitted between the FBI's Next Generation Identification System (NGI) and another site or agency. The EBTS defines the interface between FBI Criminal Justice Information Services (CJIS) and the state, tribal, international, and other federal organizations' (OFO) systems. Changes to the data fields or formats within the FBI EBTS have been structured to honor previously published protocols to ensure that the systems are not adversely affected.

The DoD EBTS standard has taken steps to incorporate key aspects of the FBI's new NGI system into DoD EBTS version 4.0 to facilitate seamless exchange between systems. Further

enhancements to the DoD EBTS will be added to future releases as requested by the community. The FBI EBTS files and record contents, formats, and data codes have been updated for the exchange of fingerprint, palm print, photo, facial, and iris information between federal, state, and local users and the FBI/CJIS.

The NGI system is now organized by User Services (Request Response based) that include the following:

1. Identification Service.
2. Verification Service.
3. Information Service.
4. Investigation Service.
5. Notification Service.
6. Data Management Service.

The new FBI NGI System has changes regarding Identity Management which involve linking records from the civil, criminal and new repositories by a unique identity reference. The NGI System will refer to this new identifier as a Universal Control Number (UCN). NGI will place this UCN into the FBI Number/UCN field (2.014 FBI)[7].

A UCN may have multiple Event Identifiers (2.2035 EVI) associated with it. For example, a person who is arrested and fingerprinted multiple times. An EVI may have multiple Biometric Set Identifiers (2.2029 BSI) associated with it, one for each modality captured during the event; for example, fingerprints and palm prints taken during a booking process[7].

1.2.7 Code Lists

New to DoD EBTS v4.0 is the addition of EBTS DoD Integrated Data Dictionary (IDD) [8] Appendix A Code Lists and Lookup Tables. In previous DoD EBTS releases, the code lists were represented as text which were associated with the individual field definitions in the IDD. In the IDD v6.0,

applicable field definitions contain a reference to the code list now located in Appendix A of the IDD document. The new separated code list format in Appendices facilitates:

- Visualization and clarification of complex code list tables.
- Cross references to other fields that reference the code list.
- Space for the additional expression of code details.
- Addition of graphical expression of code list concepts.
- Enhancements to code lists to accommodate the XML Type Concept.

1.2.8 Inclusion of Type 11 Forensic and Investigatory Voice

DoD EBTS v4.0 includes the ANSI/NIST-ITL Type-11: Forensic and Investigatory Voice Transaction. Use cases for this transaction involve the submission of voice samples and associated metadata for known or unknown speakers for the purpose of adding these samples to a corpus of previously modeled voice samples.

Type-11 data fields will support transactions related to detecting and recognizing speakers, extracting speech segments from an audio recording that are attributable to a single speaker, and linking speech segments by speaker. These functions can be accomplished through automated means (computers), human experts, or hybrid human-assisted systems. This record type does not support streaming transactions.

1.2.9 ANSI/NIST-ITL Type 9 Extended Feature Set

ANSI/NIST-ITL 1-2011: Update 2013 included enhancements to the Type 9 Minutiae data records used to exchange minutiae or other friction ridge feature data. The major set of enhancements are contained in the Extended Feature Set (EFS) for latent print markups and the EFS has also been added to EBTS v4.0. The EFS data block defines the content, format, and units of measurement for the definition and/or exchange of friction ridge feature information that may be used in the identification of a subject based on friction ridge information. This information is intended for an individual examiner to define the content of a single impression or comparison of two impressions, as well as for interchange between criminal justice administrations or

organizations that use friction ridge information for identification purposes. This specification defines a quantifiable, repeatable, and clear method of characterizing the information content of a fingerprint or other friction ridge image.

ITL-2013 Type 9 Minutiae data records also include reserved blocks, each consisting of several fields, are registered and allocated for use by specific vendors. As these blocks may contain proprietary information, no detailed information is provided regarding the content of these vendor-defined feature sets aside from the range of field numbers in this standard. For detailed information on each of these fields, the vendor should be contacted.

EFS enhancements are the foundation of Latent Interoperability Transmission Specification (LITS) [9] transactions. LITS is an application profile of the American National Standards Institute/National Institute of Standards & Technology, Information Technology Laboratory (ANSI/NIST-ITL) standard entitled "American National Standard for Information Systems: Data Format for the Interchange of Fingerprint, Facial & Other Biometric Information" (ANSI/NIST-ITL 1-2011) [9]. LITS is a system-level specification, parallel to and compatible with the Federal Bureau of Investigation Criminal Justice Information Services Electronic Biometric cross-jurisdictional automated friction ridge identification systems (AFIS).

The purpose of LITS is to enable seamless, efficient hierarchical (from local to State to regional to Federal) and peer to peer (local to local, State to State, etc.) searches; to simplify acquisitions by defining a uniform latent AFIS data exchange format; and to enable the interchange of latent print annotation among examiners as part of non-AFIS casework. LITS addresses latent AFIS interoperability between and among the States, local law enforcement agencies, regional organizations, and Federal organizations, such as the Department of Defense or the Department of Homeland Security [9].

1.3 DoD EBTS Evolutionary History

The DoD EBTS was originally developed based on the FBI Electronic Fingerprint Transmission Specification (EFTS) to support DoD specific use cases and requirements which were outside the

scope of the FBI EFTS. The DoD EBTS v1.2, originally published in 2006, only supported the fingerprint, face, and iris biometric modalities. As the biometric support for various DoD mission activities evolved, so did the requirements for the EBTS. Additionally, there have been huge strides in biometric technology since the earliest iteration of the EBTS which necessitated large changes to the relevant standards. Both the FBI's EBTS and the ANSI/NIST-ITL standards have undergone many iterative upgrades since the early 2000's, while the DoD still uses the DoD EBTS v1.2 with a series of small modifications tacked on to it.

In order to accommodate for a broader biometric mission set within the DoD, the Application Profile was developed to describe the ToT's and their constraints. It is used to describe customizations for individual operational scenarios that shape the use of the DoD EBTS. Beginning with EBTS v3.0, the Application Profile was packaged separate from the standard in order to support the widely varying mission sets. Having the ToT's separated from the Standard allows the system operators to develop ToT's without having to update the Standard, which drastically increases the timeliness of the change. Other improvements included the upgrade from ANSI/NIST-ITL 1-2000 to 1-2011, FBI EBTS v7 to v9.3.

Upgrades of major significance included in DoD EBTS v3.0 are the DNA modality, and logical records for Source Representation, Associated Context, and Information Assurance. Additionally, the DoD mandated the use of the NIEM data sharing framework. In order to comply with that mandate, the IEP model was adopted by the DFBA Standards Branch starting with EBTS v3.0.

The requirements of the biometrics user community continued to change following the publication of DoD EBTS v3.0, which necessitated the development of DoD EBTS v4.0. Major updates to the standard include: addition of the Type-11: Forensic and Investigatory Voice Record, the Extended Feature Set for latent fingerprint markup within Type-9, and alignment to ANSI/NIST-ITL 1-2013 and other updated USG biometric standards.

The table below clarifies the evolution of the Logical Records within the ANSI/NIST-ITL standard and thus, the various versions of the DoD EBTS. Logical Records which are no longer used are marked as deprecated, and new biometric modalities/transactional functionalities are indicated in a darker color for their first appearance in the standard.

EBTS v1.2 AUG '05	EBTS v2.0 NOV '06	EBTS v3.0 MAR '09	EBTS v4.0 SEP '15
Type-1: Transaction Information	Type-1: Transaction Information	Type-1: Transaction Information	Type-1: Transaction Information
Type-2: User Defined Descriptive Text	Type-2: User Defined Descriptive Text	Type-2: User Defined Descriptive Text	Type-2: User Defined Descriptive Text
Type-4: High Resolution Greyscale Fingerprint Image	(Deprecated)	(Deprecated)	(Deprecated)
Type-7: User Defined Image (used for FBI EFTS v7.1 Latent Images)	(Deprecated)	(Deprecated)	(Deprecated)
Type-9: Minutiae Data (using AFIS Feature Set)	Type-9: Minutiae Data (using IAFIS and INCITS M1-378 Feature Sets)	Type-9: Minutiae Data (using IAFIS and INCITS M1-378 Feature Sets)	Type-9: Minutiae Data (using IAFIS, INCITS M1-378, and Extended Feature Sets)
Type-10: Facial & Scars/Marks/Tattoos Images	Type-10: Facial & Scars/Marks/Tattoos Images	Type-10: Face, Other Body Part, or Scar, Mark, Tattoo (SMT) Image	Type-10: Photographic Body Part Imagery (including Face and SMT)
			Type-11: Forensic and Investigatory Voice Data
Type-13: Latent Image Data (Variable Resolution)	Type-13: Variable-resolution Latent Image	Type-13: Variable-resolution Latent Friction Ridge Image	Type-13: Friction-Ridge Latent Image
Type-14: Tenprint Fingerprint Impressions (Variable Resolution)	Type-14: Variable-resolution Fingerprint Image	Type-14: Variable-resolution Fingerprint Image	Type-14: Variable-resolution Fingerprint Image
	Type-15: Variable-resolution Palm print Image	Type-15: Variable-resolution Palm print Image	Type-15: Variable-resolution Palm print Image
Type-16: User-Defined Testing Image Data (Used for Iris Images)	(Deprecated)	(Deprecated)	(Deprecated)
	Type-17: Iris Image (formerly kept in Type-16)	Type-17: Iris Image	Type-17: Iris Image
		Type-18: DNA Data	Type-18: DNA Data
		Type-20: Source Representation	Type-20: Source Representation
		Type-21: Associated Context	Type-21: Associated Context
		Type-98: Information Assurance	Type-98: Information Assurance
	Type-99: CBEFF Biometric Data Record	Type-99: CBEFF Biometric Data Record	Type-99: CBEFF Biometric Data Record

Figure 2: Logical Records Supported by EBTS Version

2 DoD EBTS IEPD 2.0

The following section provides an overview of key components and concepts that comprise the DoD EBTS IEPD 2.0. The IEPD was developed utilizing the standard NIEM IEPD lifecycle process shown in Figure 3 – Standard Development Process.

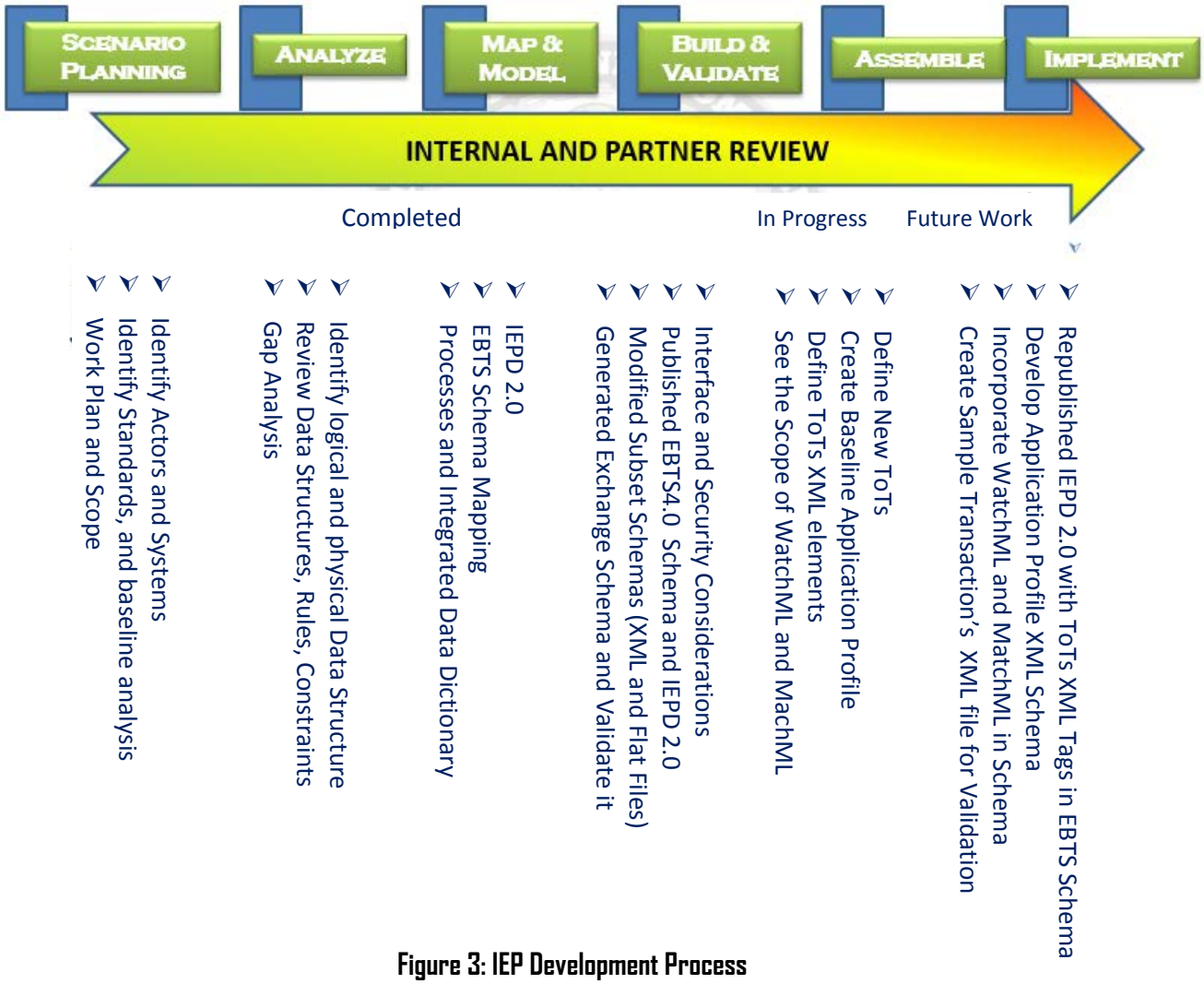

Figure 3: IEP Development Process

2.1 Model Package Definition (MPD)

The NIEM MPD [10] utilized in the development of this release DoD EBTS IEPD 2.0 is a normative specification for XML data components in the format of the World Wide Web Consortium (W3C) XML Schema Definition Language [11] & [12].

NIEM is a data layer for an information architecture. Files in an MPD generally define XML Schema types and declare XML elements and attributes to use in payloads for information exchanges. The development of MPD schema documents:

(1) Define the semantics and structure for NIEM reusable data components
(2) Define implementable NIEM exchange instance XML documents in W3C Extensible Markup Language (XML) [13].

Creation and management of IEPDs is the responsibility of stakeholders and developers. The DoD EBTS v4.0 is a logical set of electronic files aggregated and organized to fulfill the specific purpose as defined by the DoD biometric community. Directory organization and packaging of an MPD are designed around major themes in NIEM: reuse, sharing, interoperability, and efficiency. The DoD EBTS package shall be structured as follows:

/dod-ebts-iepd-2 (root directory)

dod-ebts-catalog.xml (normative artifact name)

dod-ebts-catalog-extension.xsd

dod-ebts-catalog-extension-xml-catalog.xml (normative artifact name)

changelog.*

conformance-assertion.*

readme.*

/ xsd

/dod-ebts

/xsd

/2.0

wantlist.xml

xml-catalog.xml

/itl (subset)

/xsd

/2011

/fbi-ebts (subset)

/xsd

/10.0

/genc (subset)

/xsd

/2.0.0

/niem (subset)

/appinfo

/codes

/conformanceTargets

/domains

/external

/localTerminology

/niem-core

/proxy

/structures

/extension

query.xsd

response.xsd

extension1.xsd

extension2.xsd

...

xml-catalog.xml

/external

/ic-ism

...

xml-catalog.xml

/constraint-xsd (constraint schema document sets)

/exi-xsd

gml.xsd

xs.xsd

...

/schematron

business-rules1.sch

business-rules2.sch

...

/ dod-ebts-sample

query.xml

request.xml

...

/application-info

... (tool inputs, outputs, etc.)

/docs

... (human readable documentation)

2.2 Contents and Use

The DoD EBTS 2.0 IEPD contains files required by the NIEM IEPD specification for the XML documents defined using the DoD EBTS 4.0 standard. To view the IEPD files, extract all of the files from the zip archive to a folder, then open the file named catalog.html in a browser. Once extracted from the archive, all of the files in the package can be accessed through hypertext links in the catalog.html file.

Primary Representation Term	Secondary Representation Term	Definition
Amount	-	A number of monetary units specified in a currency where the unit of currency is explicit or implied.
BinaryObject	-	A set of finite-length sequences of binary octets.
	Graphic	A diagram, graph, mathematical curves, or similar representation.
	Picture	A visual representation of a person, object, or scene.
	Sound	A representation for audio.
	Video	A motion picture representation; may include audio encoded within.
Code	-	A character string (i.e. letters, figures, and symbols) that for brevity, language independence, or precision represents a definitive value of an attribute.
DateTime	-	A particular point in the progression of time together with relevant supplementary information.

Primary Representation Term	Secondary Representation Term	Definition
	Date	A particular day, month, and year in the Gregorian calendar.
	Time	A particular point in the progression of time within an unspecified 24-hour day.
	Duration	An amount of time; the length of a time span.
ID	-	A character string to identify and distinguish uniquely one instance of an object in an identification scheme from all other objects in the same scheme together with relevant supplementary information.
ID	URI	A string of characters used to identify (or name) a resource. The main purpose of this identifier is to enable interaction with representations of the resource over a network, typically the World Wide Web, using specific protocols. A URI is either a Uniform Resource Locator (URL) or a Uniform Resource Name (URN). The specific syntax for each is defined by **[14]**.
Indicator	-	A list of two mutually exclusive Boolean values that express the only possible states of a property.
Measure	-	A numeric value determined by measuring an object along with the specified unit of measure.
Numeric	-	Numeric information that is assigned or is determined by calculation, counting, or sequencing. It does not require a unit of quantity or unit of measure.
	Value	A result of a calculation.
	Rate	A representation of a ratio where the two units are not included.
	Percent	A representation of a ratio in which the two units are the same.
Quantity	-	A counted number of nonmonetary units possibly including fractions.
Text	-	A character string (i.e., a finite sequence of characters) generally in the form of words of a language.
	Name	A word or phrase that constitutes the distinctive designation of a person, place, thing, or concept.
	List	This representation term is used in tandem with another of the denotation terms.

Figure 4: File Types Terminology

2.3 Schemas

The DoD EBTS v4.0 XML schema relies upon other schemas, reusing their elements whenever possible rather than defining new elements that would serve the same purpose as those that already exist. XML schema documents that are intended to provide the authoritative definitions of broadly reusable schema components. [15] The schemas that DoD EBTS 4.0 relies on are NIEM compliant schemas, and some are defined in U.S. national standards. This set of NIEM compliant schemas serves is the base upon which the DoD EBTS 4.0 XML schema is built.

A NIEM Naming and Design Rules document [16] is intended to be the authoritative definition of business semantics for components within its target namespace. The NIEM core schema documents, NIEM domain schema documents, and NIEM domain update schema documents are all reference schema documents. A reference schema document meets all of the following criteria:

- It is a NIEM conformant schema document.
- It is explicitly designated as a reference schema document by its own conformance targets attribute. This can be declared by an MPD catalog document or by a tool-specific mechanism outside the schema document.
- It provides the broadest, most fundamental definitions of data components in its namespace.
- It provides the authoritative definition of business semantics for data components in its namespace.
- It is intended to serve as a basis for components in IEPD schema documents, including schema document subsets, constraint schema document sets, and extension schema documents.

Namespace	IEPD Release 1.0	IEPD Release 2.0
NIEM Biometric[1]	1.0	3.2.1
NIEM ISO 3166 Country Codes	-	Transition to Geopolitical Entities Names and Codes (GENC 3.0) from the United States version of ISO-3166
NIEM Intelligence	-	3.2
NIEM JXDM Domain	4.1	5.2
DoD EBTS	3.0	4.0
FBI EBTS	9.3	10.0.3
TWPDES	2.0	3.0
ANSI/NIST-ITL 1-2011	2011	Update 2013 (Incorporation Type 11 Voice)

Figure 5: Schema Namespace Versions

Note: In the IEPD 2.0 DoD schema, elements from both NIEM Biometric reference schemas 3.2 and 1.0 are used. Both versions are referenced because not all the elements needed for our current EBTS and for the FBI EBTS 10.03 migrated from the 1.0 to the 3.2 versioning.

The NIEM schemas form the foundation for DoD EBTS v4.0 XML schema and all of the other schemas it relies on. The NIEM subset contains NIEM reference schemas and NIEM domain schemas. The schema relationships are illustrated in the following figure:

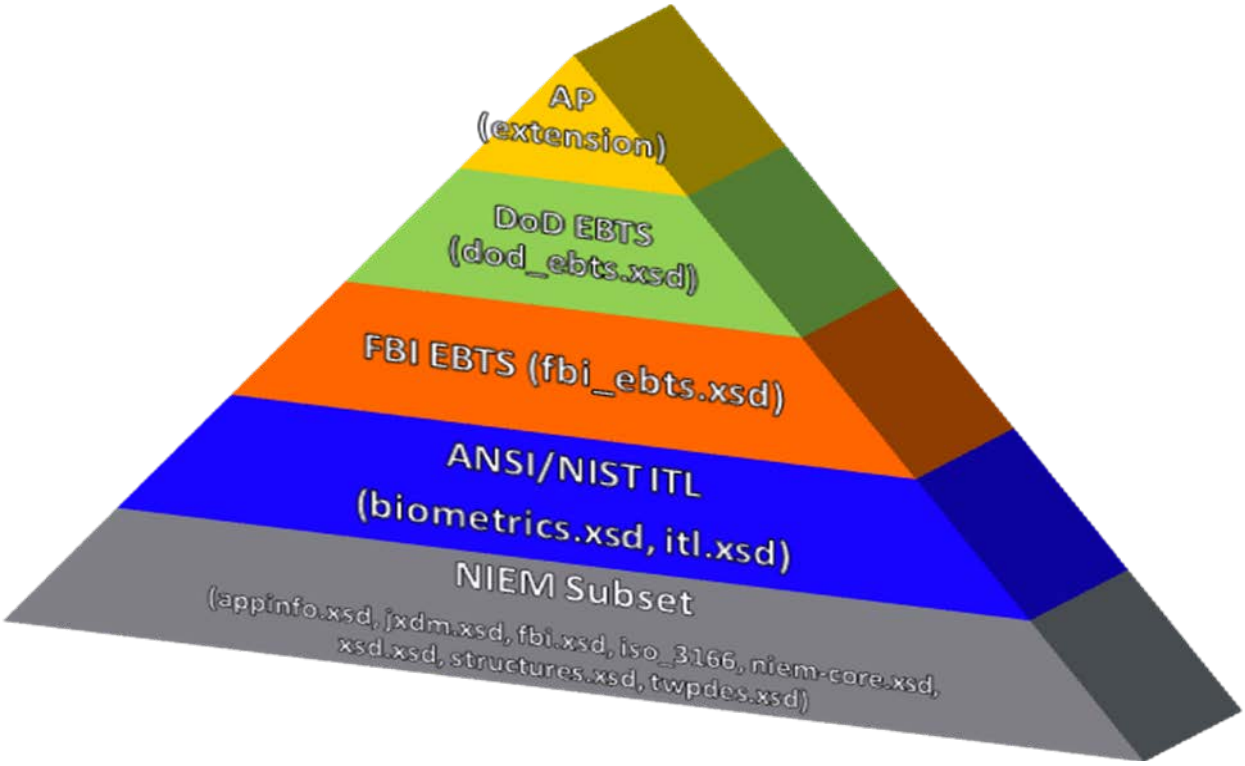

Figure 6: Schema Relationships

2.3.1 NIEM Subset Schema

Only a small part of the NIEM schemas are needed to implement DoD EBTS information exchange. Reduced versions of NIEM schemas containing a subset of elements and types needed for support are provided in this IEPD. Using the provided subset schemas reduces complexity and promotes application processing efficiency.

A NIEM schema document subset is a set of XML schema documents that constitutes a reduced set of components derived from a NIEM reference schema document or document set associated with a given numbered release or domain update. [17] The NIEM subset schemas are stored in the xsd\niem folder of the IEP. This directory includes folders for NIEM reference schema and domain schema files.

2.3.2 Exchange Schema

The exchange schemas are stored in the xsd\ folder of the IEP. The itl.xsd exchange schema contains NIEM-conformant types and elements defined in the 2011: Update 2013 version of the American National Standards Institute (ANSI) and National Institute of Standards and Technology (NIST) “Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information” [18] standard.

2.3.3 Extension Schema

A NIEM extension schema directory [17] contains components that use or are derived from the components in reference schema documents. It is intended to express additional vocabulary above and beyond the vocabulary available from reference schema documents.

The DoD EBTS schema defines requirements for exchanging biometric information in electronic format within the U.S. Department of Defense. The dod_ebts schema is based on requirements for logical record and field formats defined in the ANSI/NIST ITL standard, and requirements defined in the Department of Justice (DOJ) and FBI EBTS standard Additional requirements needed to perform the mission and achieve the goals of the DoD are also contained in the IEP.

2.4 XML Instance Documents

DFBA Standards Branch is working on planning and developing new ToTs. As soon as the ToTs are defined, the sample XML instances and templates will be provided in the xml\folder of the IEP in the DOD-EBTS SCHEMA 4.0.

To facilitate the development of DoD EBTS XML instance documents and messages, sample XML instances and templates are provided in the xml\ folder of the IEP. These examples illustrate how particular DoD EBTS transactions can be constructed. More details regarding these transactions are located in the Application Profile [19] document artifact.

The following samples and templates are included in the xml\ folder:

− SMPL(CAR)CriminalTenprintSubmission

– SMPL(CNA)CriminalTenprintSubmissionNoAnswer

– SMPL(CPDR)CriminalFingerprintDirectRoute

– SMPL(DEK)DeceasedKnown

– SMPL(DEU)DeceasedUnknown

– SMPL(DPRS)DoDFlatPrintRapSheetSearch

– SMPL(ERRL)LatentTransactionError

– SMPL(ERRT)TenprintTransactionError

– SMPL(LFFS)LatentFrictionRidgeFeaturesSearch

– SMPL(LFIS)LatentFrictionRidgeImageSearch

– SMPL(MAP)MiscellaneousApplicant

– SMPL(RPSR)RapidPrintImageSearchResponse

– SMPL(SRE)SubmissionResultsElectronic

– SMPL(SRL)SearchResultsLatent

– SMPL(TPRR)TenprintRapsheetResponse

– SMPL(TPRS)TenprintRapSheetSearch

– SMPL(VEN)VoiceEnrollment

– SMPL(VEC)VoiceEnrollmentConfirmation

– SMPL(SID)SpeakerIdentification

– SMPL(SCR)SpeakerCandidateResults

– SMPL(VEX)VoiceEnrollmentExport

– SMPL(VXR)VoiceExportResults

2.5 List of Artifacts

NIEM packages are generally composed of files and file sets grouped for a particular purpose. Each file is referred to as an artifact, and each logical set of such files is called an artifact set. This DoD EBTS IEP documentation contains the set of artifacts that define the structure and content of the DoD EBTS IEP.

NIEM packages are composed of mandatory and optional artifacts. The major, normative artifacts included in this IEPD are the NIEM Subset XML schema, and the Exchange, and Extension schema described in section 2.3 of this document. The following table describes the contents of the DoD IEPD 2.0 package:

Artifact	Description	File Types	(R)Required/ (O)Optional
Exchange Files (normative XML)			
Subset Schema	A directory structure containing the IEP-specific subset of the full NIEM schemas. Subset schemas are located in the DoD IEPD 2.0 xsd directory.	xsd	**R**
Wantlist	User requirements—an SSGT-generated XML file containing user-selected NIEM components specific to an IEP. It saves the current state of a NIEM subset schema so that it can be later modified and/or regenerated. Wantlists are located in the main DoD IEPD 2.0 directory as wantlist.xml.	xml	**R**
Exchange Schema	Base document schema that defines the XML root element and is generally named after the IEPD itself. Also known as the document schema, reference schema, or root schema. Exchange schemas are located in the main DoD IEPD 2.0 directory as wantlist.xml.	xsd	**R**
Constraint Schema	Constraints for separate constraint validation path. At the publish date of this document no constraint schemas have been defined for inclusion or association with the DoD EBTS IEPD 2.0.	xsd	**O**
Extension Schema	Specification for extended components—separate local namespace of components not contained in NIEM. Subset schemas are located in the DoD IEPD 2.0 xsd directory.	xsd	**O**
Sample XML Instance	Example instances. Example XML schemas are located in the DoD IEPD 2.0 xml directory.	xml	**O**
Sample Stylesheet	Example stylesheet for display of instances, which may be multiple. At the publish date of this document no constraint schemas have been defined for inclusion or association with the DoD EBTS IEPD 2.0.	xsl	**O**

Figure 7: Table of Artifacts

Documentation			
Master Documentation	May include purpose, business requirements, what, when, why, how to, etc. Guidelines are needed for master documentation content, and the following indented items are possible documents that can be contained within the master documentation or broken out as individual files.	txt, doc	**R**
Business Requirements	Itemized descriptions that may also contain business rules. At the publish date of this document no constraint schemas have been defined for inclusion or association with the DoD EBTS IEPD 2.0.	txt, doc	**O**
MOUs	Memoranda of understanding among participating agencies.	txt, doc	**O**
Endorsement Letters	Documentation from professional or governmental organizations that confirm support.	txt, doc	**O**
Methodology and Tools	Used to build IEPD and may contain URLs or references to tools, methodology, or documentation.	txt, doc	**O**
Change Log	Contains a record of cumulative changes from previous IEPD versions. The initial IEPD simply records its creation date. This change log records the changes from DoD EBTS 3.0 to DoD EBTS 4.0.	xml, txt, doc	**R**
Use Case Model	Use case diagram in standard open format and standard graphic, likely UML.	vsd, xmi, zargo, jpg, pdf, etc.	**O**

Figure 6: Table of Artifacts (Cont.)

Artifact	Description	File Types	(R)Required/ (O)Optional
Documentation			
Business Rules	May contain: (1) plain or structured English, (2) written into master documentation, (3) Schematron or other formal business rule language, or (4) generated by a development tool.	xml, txt, doc	**O**
Mapping	Used to map changes in the DoD EBTS field set from previous releases of the standard.	xls, csv	**O**
Extended Components	Components created because they were not in NIEM—may be part of mapping spreadsheet and include structure and definitions of new components.	xml, xls, csv	**O**
Catalog Files			
Catalog	List of artifacts in the IEPD that is machine-readable; in an open, portable format; and browser displayable. .	xml, xhtml	**R**
Metadata	All metadata registered with the IEPD.	xml, xhtml	**R**

Figure 6: Table of Artifacts (Cont.)

2.6 Prefix Namespace Descriptions

An XML schema can be viewed as a collection (vocabulary) of type definitions and element declarations whose names belong to a particular namespace called a target namespace. Target namespaces enable us to distinguish between definitions and declarations from different vocabularies.

This IEPD incorporates multiple markup vocabularies. It is intended that these vocabularies will be used together in XML documents. Each vocabulary is assigned a unique namespace prefix to fully qualify its element and attribute names and differentiate these names from those found in other vocabularies.

Prefix	Namespace	Description
biom	**http://release.niem.gov/niem/domains/biometrics/3.2/**	NEIM ANSI/NIST Biometrics Domain *Note: biom Schema of Niem3.2 Version is missing some of the data elements that IEPD 2.0 (DoD ebts schema and FBI_ebts 10.03) shemas used, so IEPD 2.0 has to use both version of Biom schema from Niem 1.0 and Niem 3.2*
genc	**http://release.niem.gov/niem/codes/nga_genc/3.0/**	Geopolitical Entities Names and Codes (GENC 3.0) the United States replacing version of ISO-3166 *Note: nga_genc Schema of Niem3.2 Version has only Alpha3code, so IEPD2.0 version has to customize the nga_genc schema to include Alpha2 code and Numeric country code from Niem 2.0 to make it compatible with IEPD2.0*

Figure 8: DoD EBTS Namespaces Utilized

Prefix	Namespace	Description
dod-ebts	http://www.dfba.mil/References/Standards.aspx	DoD EBTS data type and complex contents extensions
niem-xs	http://release.niem.gov/niem/proxy/xsd/3.0/	Proxy types that carry dictionary metadata and have XML data type simple contents.
iso_639-3	http://release.niem.gov/niem/iso_639-3/	*Codes for the representation of names of languages - Part 3: Alpha-3 code for comprehensive coverage of languages.*
fbi-ebts	https://www.fbibiospecs.cjis.gov/Document/Get?fileName=EBTS%20IEPD%2010.0.3.zip	New FBI NGI System
nist-itl	http://biometrics.nist.gov/cs_links/standard/ansi_2015/schema-MRT/ANSI-NIST-ITL-2013_FINAL.zip	ANSI NIST 2011: Update 2013 Biometrics Domain
appinfo	http://release.niem.gov/niem/appinfo/3.0	NIEM application information schema for creating types
iso_3166	http://release.niem.gov/niem/iso_3166/	Codes for the representation of names of countries and their subdivisions from the International Organization for Standardization (ISO) 3166-1:1997 *Note: ISO_3166 Schema of Niem3.2 Version has only Alpha2code, so IEPD2.0 version has to customize the ISO_3166 schema to include Alpha3 code and Numeric country code from Niem 2.0 to make it compatible with IEPD2.0*

Figure 7: DoD EBTS Namespaces Utilized (Cont.)

Prefix	Namespace	Description
j	http://release.niem.gov/niem/domains/jxdm/5.2/	Department of Justice (DOJ) base Justice Exchange information
nc	http://release.niem.gov/niem/niem-core/3.0/	NIEM Core includes both Universal (U) and Common (C) components. The identities for U and C components in Core are maintained with metadata
niem-xsd	http://release.niem.gov/niem/proxy/xsd/3.0/	The NIEM distribution proxy schema provides complex type bases for some of the simple types in the XML Schema namespace
structures	http://release.niem.gov/niem/structures/3.0/	Schema constructs for use by NIEM-conformant schemas to provide consistent definitions and functionality
twpdes	http://release.niem.gov/niem/twpdes/	Terrorist Watchlist Person Data Exchange Standard (TWPDES) [18] containing TWPDES code lists
ncic	http://release.niem.gov/niem/codes/fbi_ncic/3.0/	FBI code lists for the National Crime and Information Center (NCIC-2000). Source: FBI Crminal Justice Information Systems (CJIS) Division; Publication
xsd	http://www.w3.org/2001/XMLSchema	The XML Schema namespace
fips_10-4	http://release.niem.gov/niem/fips_10-4/2.0/	Lists two-letter country codes for the US Countries, Dependencies, Areas of Special Sovereignty, and Their Principal Administrative Divisions
ucr	http://release.niem.gov/niem/ucr/2.0/	The People Screening domain provides harmonized information sharing content within the Screening Portfolio of DHS.
ndex	http://release.niem.gov/niem/codes/fbi_ndex/3.0/	FBI Crminal Justice Information Systems (CJIS) Division; Publication: National Data Exchange (N-Dex) Specification (a NIEM IEPD); Version: 2.2;
xs	http://www.w3.org/2001/XMLSchema	The XML Schema definition language, which offers facilities for describing the structure and constraining the contents of XML documents.

Figure 7: DoD EBTS Namespaces Utilized (Cont.)

2.7 Type 2 Historical Cross-Walk

This document will contain a historical progression of the mapping of the ANSI NIST ITL Types from version 1.2 to the latest version 4.0. This crosswalks reflects a "lateral" (one-way) progressive mappings from one standard version to another. The mapping matrix will identify:

- Elements that were split up with different parts of it placed in multiple other elements in the next version ("one-to-many" mapping).
- Cardinality differences between different versions of an element.
- Transitions in data formats (e.g. John Doe or Doe John Cornelius Jr).
- Hierarchical changes in element composition.
- Element code list or type reference changes.
- New key components introduced into the standard (i.e. ANSI NIST ITL Type 9 Extended Feature Set – EFS)

2.8 Application Profile

The DoD EBTS standard is working on the development effort to provide data elements for the application profile. The application profile uses Integrated Data Dictionary v6.0 elements to fully describe the unique requirements of a particular operational environment.

An application profile includes:

- Transaction details for each transaction:
    - o which fields are mandatory or optional for each logical record;
    - o how many occurrences of each field are required/allowed;
    - o which logical records are mandatory or optional; and
    - o how many occurrences of each logical record are required/allowed.
- Definition of the names and purposes of each transaction;
- The identifier assigned by DFBA to name the Application Profile (to be placed in the Application Profile Specifications field (1.016));

• Conformance requirements for both originators and receivers of transactions.

An application profile can specify the conformance requirements of a DoD EBTS implementation to improve the likelihood of interoperable applications. Once an application profile is reviewed by the DoD Forensic and Biometric Standards Working Group (FBSWG), new content can be added to extend the DoD EBTS schema. User defined application profiles can also be used to provide additional schema constraints.

The current baseline application profile is provided on the Defense Forensics and Biometrics Agency (DFBA) website. This document serves as a useful example of an approved profile. Application profile-based XML instance documents must validate against the DoD EBTS schema and any user defined elements and constraints.

Constraint schemas in an application profile can further restrict the DoD EBTS schema. User defined constraints must conform to all NIEM Naming and Design Rules requirements. They may only further restrict DoD EBTS defined components. They may not be used to relax DoD EBTS restrictions.

2.9 XML Structuring

The XML encoding rules conform to the National Information Exchange Model (NIEM), which facilitates interoperability for information sharing among multiple government agencies. The XML encoding includes rules for how use redefined extensions may be included inside the standard XML package, but do not define how the package may be wrapped in other XML structures.

2.9.1 ANSI NIST ITL XML Conventions

The data formats for the Interchange of Fingerprint, Facial& Other Biometric Information ANSI/NIST-ITL 1-2011 Update: 2013 [1] developed for electronically encoding and transmitting biometric image, identification, and arrest data that extends the ANSI/NIST-ITL standard. The

ANSI/NIST-ITL is developed and maintained in conjunction with the National Institute of Standards and Technology (NIST) and the biometric identification community.

- **Fields**

A field is used to transmit a particular datum or group of closely related data. A single type of data that may have multiple entries in a field is shown as Subfield: repeating values in the record layout tables. Single or multiple types of data in a field that do not repeat are shown as information items in the record layout tables. Data with different formats that repeat as a set are shown as information items grouped under the heading: Subfields: Repeating sets of information items. The handling of subfields varies by encoding.

- **Transaction Sets**

A transaction package shall consist of two or more logical records. There may be multiple records in a transaction of each record type other than Type-1. There shall be at least one other record of another Type. A record is comprised of fields. Within the standard, each field is assigned a number, a description and a mnemonic.

For most record types, an individual record generally contains biometric and/or forensic data for a single subject. There are some scenarios where a record may pertain to multiple subjects, such as a Type-11 recording with multiple speakers, or a Type-20 image of evidence with fingerprints from various people. A given transaction may require that all records apply to a single subject, or may contain records from different subjects.

Thus, there is a difference between the subject of the transaction and the subject of the record. It may be desirable in certain transactions to have separate Type-2 records when dealing with multiple persons whose identities are being used to establish or verify the identity of the subject of the transaction (such as persons already identified in a voice recording). The value is the IDC of the associated Type-2 record, which is different from that of the record with the Type-2 Record cross reference / T2C contained in it.

- **Transaction Concept**

A conceptual diagram of a DoD EBTS transaction set is shown below.

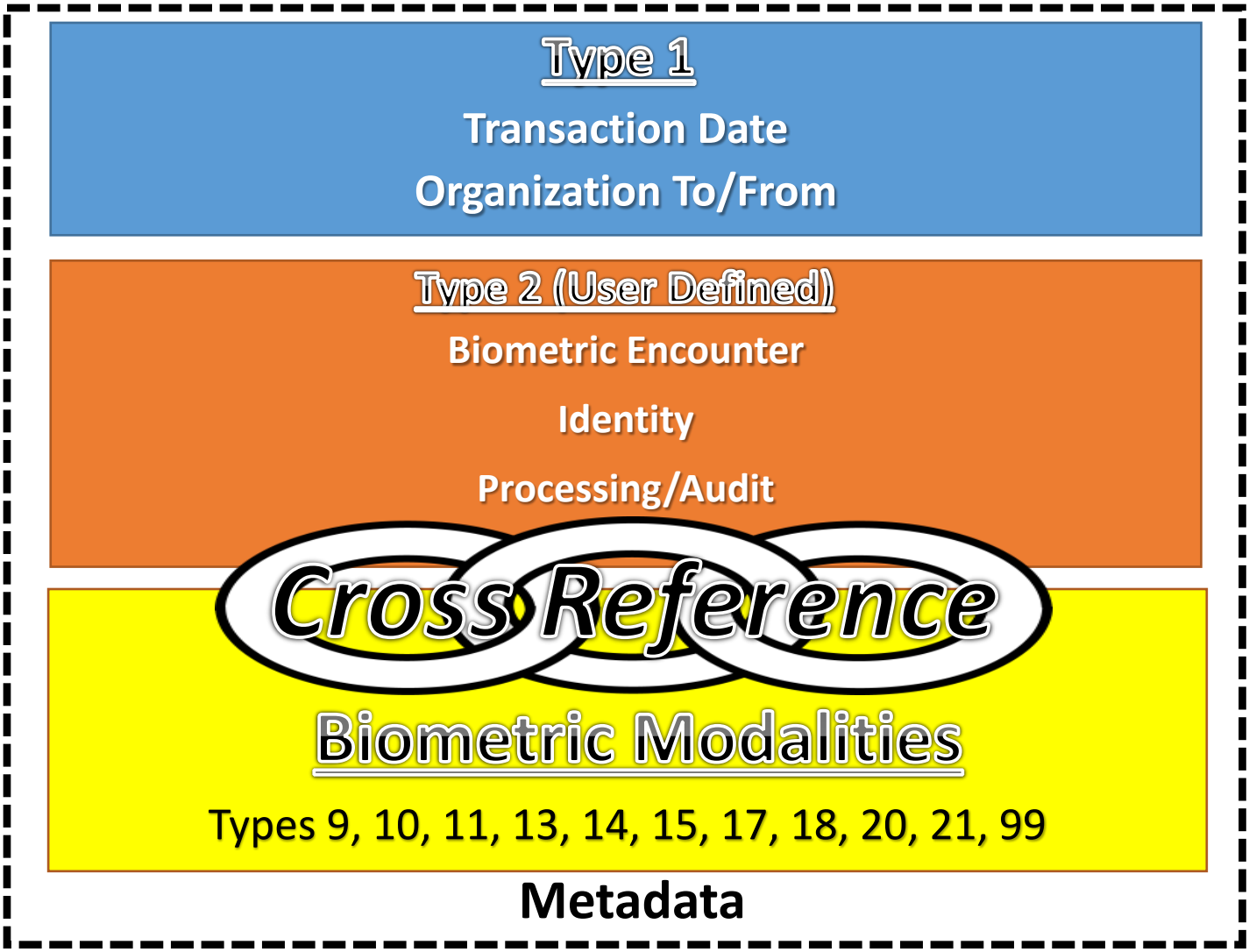

Figure 9: DoD EBTS 4.0 Transaction Concept

Type-1 shall always be recorded in all encodings using the characters that can be represented by the 7-bit American National Standard Code for Information Interchange (ASCII).

Type-2 records shall contain user-defined textual fields providing identification and descriptive information associated with the subject of the transaction. Each entry in a Type-2 record shall have a definition and format that is listed with the Domain owner. Data contained in this record shall conform in format and content to the specifications of the domain name(s) as listed in Field 1.013: Domain name / DOM found in the Type-1 record, if that field is in the transaction.

In order to track relationships among instances of records in a transaction, some special pointer indexes are used within the Record Types. The information designation character / IDC (called image designation character in previous versions of the standard) occurs in each instance of a record, except Record Type-1. It occurs as Field xx.002 in those records.

There is an upper limit of 100 IDC values, since they are numbered from 0 to 99. There may be no gaps in numbering the IDC values; that is, they must be sequential. However, there is no requirement that the values must be in increasing numeric order. The only restrictions on order is that the Type-1 record shall be the first record in the transaction, and that the records must appear in the order indicated in Field 1.003: Transaction content / CNT. Two or more records may share a single IDC solely to identify and link together records that pertain to different representations of the same biometric trait.

2.9.2 XML Record Container

Each ANSI NIST ITL 2011: Update 2013 record type contains XML elements as defined in the DoD EBTS IDD 4.0 (denoted by "…." In Figure 9 below). Each record is contained within an XML envelope to define the boundaries of that record type.

Record Type	Type XML Record Container
1	<nist-itl:PackageInformationRecord> …. </nist-itl:PackageInformationRecord>

Figure 10: XML Record Container

Record Type	Type XML Record Container
2	<nist-itl:PackageDescriptiveTextRecord> <nist-itl: UserDefinedDescriptiveDetail> …. </nist-itl: UserDefinedDescriptiveDetail> <nist-itl: DomainDefinedDescriptiveDetail> …. </nist-itl: DomainDefinedDescriptiveDetail> <nist-itl: OtherDescriptiveDetail> …. </nist-itl: OtherDescriptiveDetail> </nist-itl:PackageDescriptiveTextRecord>
9	<nist-itl:PackageMinutiaeRecord> ….. </nist-itl:PackageMinutiaeRecord>
10	<nist-itl:PackageFacialAndSMTImageRecord> ….. </nist-itl:PackageFacialAndSMTImageRecord>
11	<nist-itl:PackageVoiceRecord> ….. </nist-itl:PackageVoiceRecord>
13	<nist-itl:PackageLatentImageRecord> ….. </nist-itl:PackageVoiceRecord>

Figure 9: XML Record Container (Cont.)

Record Type	Type XML Record Container
14	<nist-itl:PackageFingerprintImageRecord> ….. </nist-itl:PackageFingerprintImageRecord>
17	<nist-itl:PackageIrisImageRecord> ….. </nist-itl:PackageIrisImageRecord>
18	<nist-itl:PackageDNARecord> ….. <nist-itl:PackageDNARecord>
20	<nist-itl:PackageSourceRepresentationRecord> ….. </nist-itl:PackageSourceRepresentationRecord>
21	<nist-itl:PackageAssociatedContextRecord> ….. </nist-itl:PackageAssociatedContextRecord>
98	<nist-itl:PackageInformationAssuranceRecord> ….. </nist-itl:PackageInformationAssuranceRecord>
99	<nist-itl:PackageCBEFFBiometricDataRecord> ….. </nist-itl:PackageInformationAssuranceRecord>

Figure 9: XML Record Container (Cont.)

2.9.3 Character Set Conventions

Each XML information element, tags and data content, in a transaction shall be represented by a character set that is a subset of Unicode and that is allowable by W3C XML. In order to ensure that the transaction description information can be read by all systems, data for all fields in

Record Type-1 shall always be recorded in all encodings using the characters that can be represented by the 7-bit American National Standard Code for Information Interchange (ASCII). [21]

The 2007 version of the ANSI NIST ITL standard allowed users to switch any data (except that contained in the Type-1 record) to an alternative character encoding using a mechanism employing special control characters. This capability is retained in this version of the standard for Traditional encoding to ensure backward compatibility.

The default character encoding for Traditional encoding is 7-bit ASCII. For XML, the default is UTF-8. It is not possible to switch character encodings in XML, but users are encouraged to state the character encoding (normally UTF-8) and version (1.0) in Field 1.015: Character encoding / DCS. [1]

<?xml version='1.0' encoding='UTF-8'>

The data contained in an information item may be of the following types [1]:

A	Alphabetic: 26 English letters (both upper and lower case)
AN	Alphanumeric: Alphabetic and numeric 1 2 3 4 5 6 7 8 9 0
ANS	Alphanumeric and special characters that are specifically stated in the description of the data (such as period or comma)
AS	Alphabetic and special characters that are specifically stated in the description of the data (such as period or comma)
B	Binary for Traditional encoding or Base64 for XML
Base64	Base-64 encoded (exclusively)
H	Hexadecimal representation: 0 1 2 3 4 5 6 7 8 9 A B C D E F
N	Numeric: 1 2 3 4 5 6 7 8 9 0

NS	Numeric with special characters that are specifically stated in the description of the data (such as period or comma)
U	Unicode characters: Latin and extended Latin characters like u, N, c, Þ, s, ł, ặ, and special characters like ₤, €, ™, +, * , ‡, and non-Latin characters like ᆄ, ංჳ, Δ̊, Ⴤ , ж, ઐ, 句, ت , ע , and の.

The special characters “STX”, “ETX”, “^{F} S”, “^{G} S”, “^{R} S”, and “U S” are reserved and shall not be included in any data (except data marked as character type B).

Binary image data may be constructed in either compressed or uncompressed form, then shall be converted to ASCII characters prior to transmission using Base-64 encoding. Base-64 shall be used for converting non-ASCII text into ASCII form, where required and noted in the standard.

Binary data fields, other than image data, in the Type- 4, 7, and 8 records have been given conventional XML element tags.

3 Conformance

3.1 DoD EBTS Implementation Conformance

DoD EBTS implementations shall conform to the mandatory features of ANSI/NIST-ITL 1-2011 (Update 2013) and to the mandatory features of this specification which are defined by the Type of Transaction (ToT) in the associated Application Profile. Each ToT within the application profile will have its own conformance requirements.

A DoD EBTS v4.0 transaction is conformant to ANSI/NIST-ITL 1-2011 (Update 2013) standard if the Biometric Electronic File Transaction (EFT) is capable of being morphologically (satisfies all of the normative morphological requirements related to its data structure and data values), syntactically (satisfies all of the normative requirements related to the relationships between

fields, subfields, or information items) and semantically (checks if the biometric transaction is a faithful representation of the parent biometric data and ensures requirements are satisfied that are not merely syntactical or morphological) conformant to the requirements of the standard.

The same rules shall also apply to the usage of FBI EBTS v10 data fields utilized in the Type-2 logical record.

3.2 NIEM

The NIEM information exchange reference model is not a strict standard against which conformance is easily measured. All parts of the NIEM need not be used in a given IEPD for that IEPD to conform to NIEM requirements. Even the NIEM Conformance Validation tool is not “the authoritative source for NIEM conformance”, and therefore, cannot “guarantee or be used to certify full NIEM conformance”.

Implementers may create constraint schemas that add any of the schemas used in this standard. These constraint schemas must follow the rules for NIEM constraint schemas as they are defined in the NIEM Naming and Design Rules. They may only be used to add constraints and restrictions to components; they must not loosen the standard by allowing content that is not allowed by the schemas upon which they are based.

NIEM conformance rules were followed during the development of this DoD EBTS IEPD. These rules served as guidelines for achieving our goal of creating a common, unambiguous understanding of biometric information that could be shared across the DoD and with its information exchange partners.

This DoD EBTS IEPD conforms to the following NIEM conformance rules and guidance:

- All instances are XML valid and validate against all NIEM reference schemas used
- All IEPD schemas import and reference required NIEM namespaces
- Where appropriate, existing NIEM components (e.g., types, elements, attributes, etc.) were used

- All NIEM components were used in accordance with their definitions
- All required artifacts have been defined and provided following the NIEM IEPD Lifecycle
- All schema components adhere to the NIEM Naming and Design Rules (NDR).

3.3 NIST

NIST Special Publication 500-295 Conformance Testing Methodology for ANSI/NIST-ITL 1-2011, Data Format for the Interchange of Fingerprint, Facial & Other Biometric Information (Release 1.0) [22] contains conformance assertions for Record Types 1, 4, 10, 13, 14, 15, and 17.

3.4 DoD EBTS Domain

The domain for a transaction is identified by the Domain Name field (1.013). ANSI/NIST ITL 1-2011 defines an implementation domain as "a group of organizations that have agreed to use specific pre-assigned data blocks for exchanging information unique to their installations." The ANSI/NIST-ITL uses implementation domains to define common sets of Type-2 tags. The DoD EBTS allows an application profile to define much more (including transactions). The DFBA is the domain registrar for the DoD EBTS implementation domain and assigns values for this field. Users requiring a unique Domain Name in lieu of the default values below must contact the DFBA Standards Branch and the DFBA Watch Desk. Users of the DoD EBTS v4.0 domain shall populate the field as follows:

Field 1.013 Domain Name:

• Subfield 1.013_1 Domain Name (DNM) – NORAM

• Subfield 1.013_2 Domain Version Number (DVN) – DoD EBTS 4.0

3.5 DoD ABIS Backward Compatibility

To achieve backward compatibility, it is the onus of the DFBA Standards Branch, in conjunction with the rest of the DoD Biometrics enterprise, to produce versions of the EBTS which facilitate

modern and legacy biometric transactions for as long as is operationally and financially reasonable. Additionally, the DoD Authoritative Biometric Repository (i.e., ABIS and future evolutions of the authoritative repository) must maintain the capability to process transactions conforming to DoD legacy standards (e.g. DoD EBTS v1.2). Systems that collect DoD EBTS data shall plan their acquisition phases accordingly and use the mandated DoD Information Technology Standards and Profile Registry (DISR) EBTS version for data transmission. Legacy collection systems that utilize older versions of the DoD EBTS shall receive responses that conform to their respective versions.

3.6 Encounter Protection

DoD EBTS v4.0 identifies Field 2.351 for Encounter Protection. However, Field 2.351 Encounter Protection shall not be configurable by the user or the biometric capturing device (i.e., Encounter Protection is for internal use only at this time). Submissions from organizations that must use Encounter Protection should contact BIMA operations and the DFBA Standards Branch to coordinate the use of Encounter Protection with them. It is the responsibility of ABIS to follow the Encounter Protection business rules based on the Originating Agency Identifier.

3.7 Transaction Control Numbers (TCN)

A control number is an identification number which is assigned to a submission and carried through on the response for tracing purposes. The Transaction Control Number (TCN) is a unique identifier generated by the system that submits the transaction. When a transaction is sent to a system that receives and generates responses, the Transaction Control Reference (TCR) in the response(s) will be the TCN used in the submission. A TCN is mandatory for a submission, and a TCR is mandatory for a response. These values are contained in the Type-1 record of a DoD EBTS transaction.

Upon submitting a transaction to a DoD repository, the submitter places his control number in the TCN field in the Type-1 record. For submissions not requiring reference to a prior transaction,

the TCR field is omitted. When the DoD repository has completed processing the transaction and generates the response, it places the submitter's control number (the received TCN) into the TCR field of the response as a reference number the submitter can use to mate the response with the original submission. The DoD repository also places its own internal identifier for that transaction in the TCN field of the response. Figure 10 illustrates, as an example, the TCN and TCR in the transaction flow in the DoD ABIS.

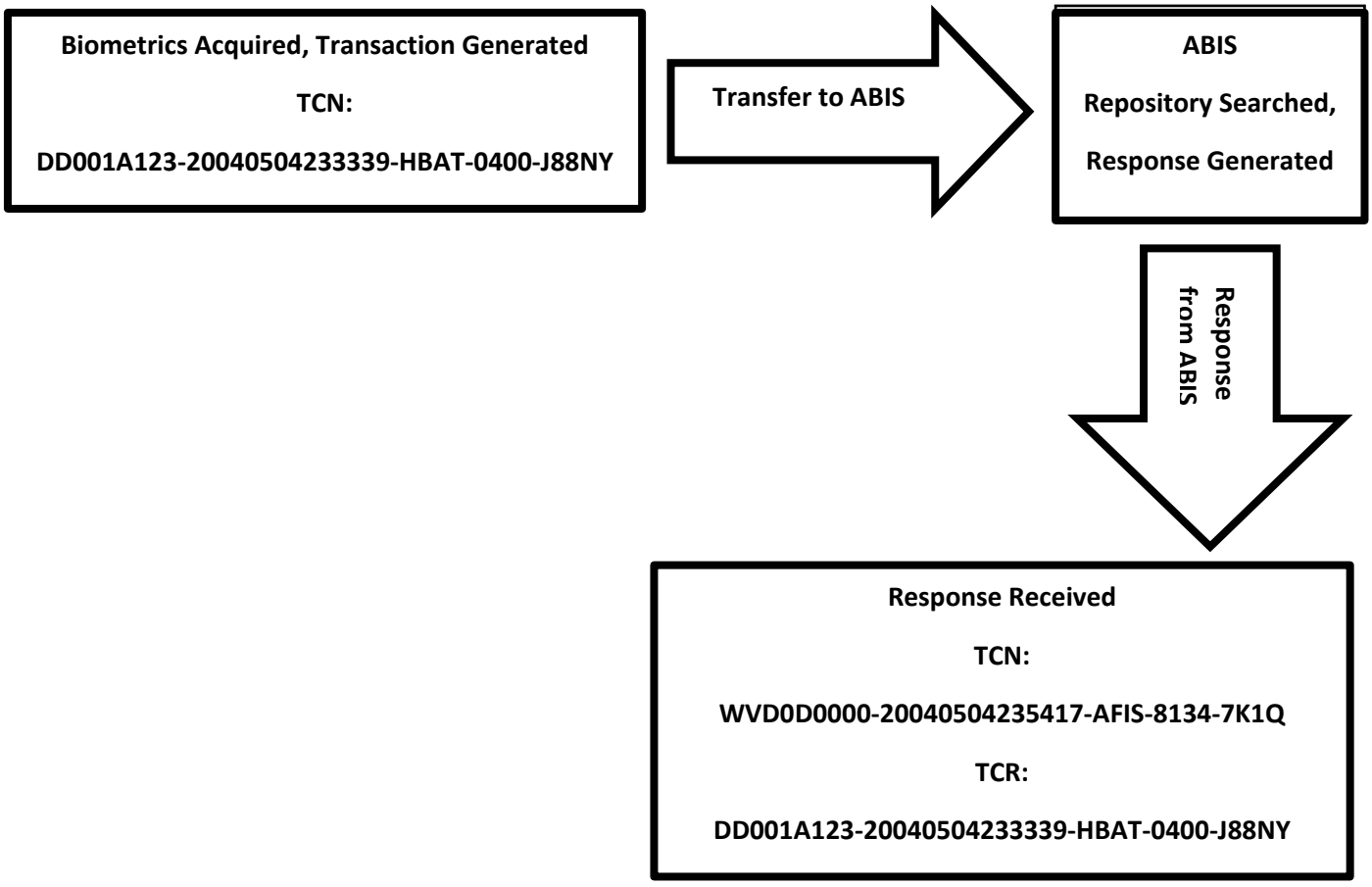

Figure 11: Transaction Submission and Response Sequence

The DoD EBTS requires a 40-byte TCN that contains

- the Originating Agency Identifier (ORI);
- a Greenwich Mean (a.k.a. Zulu or UTC) date/time stamp;
- a code for the software used at the point of collection/transmission;
- an indicator of the software version used at the point of collection/transmission; and
- a random or sequential alphanumeric string.

A hyphen separates each of these values. Figure 11 illustrates the makeup of the TCN.

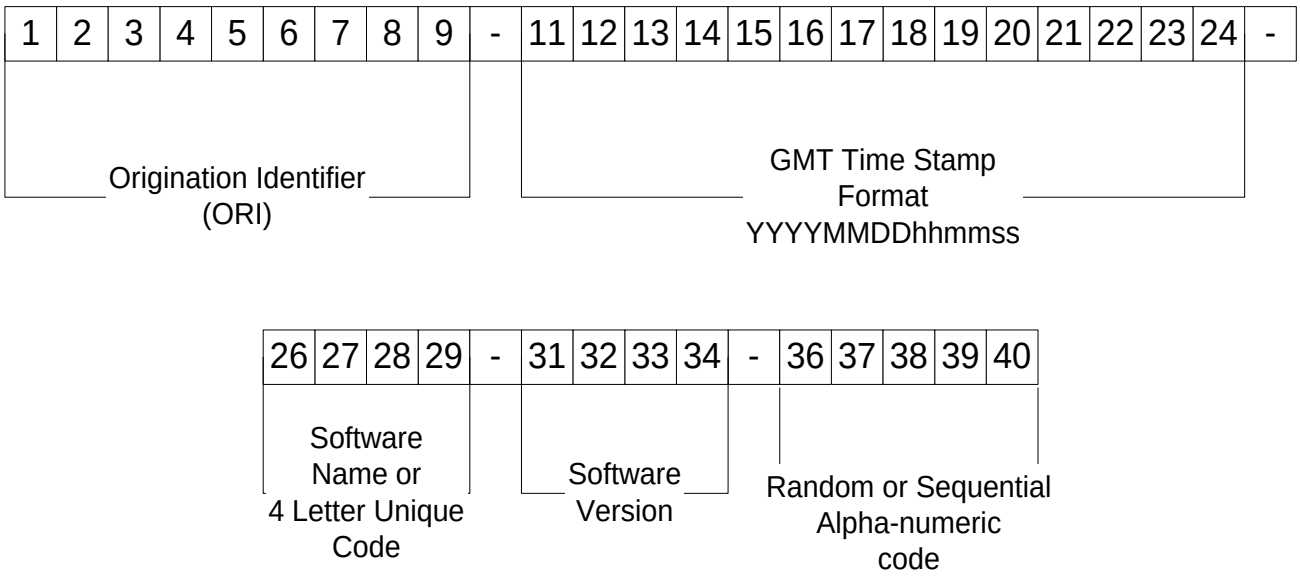

Figure 12: TCN Layout

The BIMA Watch Desk will assign a unique software code to a product. Software developers must contact the BIMA Watch Desk to obtain a four-letter software code (Figure 11, TCN blocks 26 – 29). This code must be used consistently in the software product.

Systems that initiate transactions must assign TCNs rather than permit operators to enter them. A TCN shall be unique and shall not be reused. Matching a TCN to a TCR is the method used to match DoD EBTS responses to DoD EBTS submissions. It is strongly suggested the filename for the Electronic File Transaction is the TCN.

3.8 Origination Identifiers (ORI)

The mandatory origination field shall contain the ORI identifying the agency or organization submitting the transaction. For DoD EBTS purposes, this field shall be a nine-byte alphanumeric field. The BIMA will assign an ORI code to entities that submit directly to DoD ABIS. Those DoD entities must contact the BIMA Watch Desk to obtain an ORI.

Historically, the DoD has underutilized the Originating Agency Identifier (ORI)/Controlling Agency Identifier (CRI) chain of custody. In order to properly track an EBTS file from origin to current owner, custodians of a biometric file must adhere to the following guidance. Upon generation of a new biometric file, no CRI is required because the originator is indicated by the ORI. When the file is passed to a different system, the existing ORI is entered into the CRI field, and replaced by the ORI of the system which is submitting the file. This forms a chain of file custodians in the CRI field, and can thusly be used as a digital chain of custody for a biometric file. An example of this process is as follows.

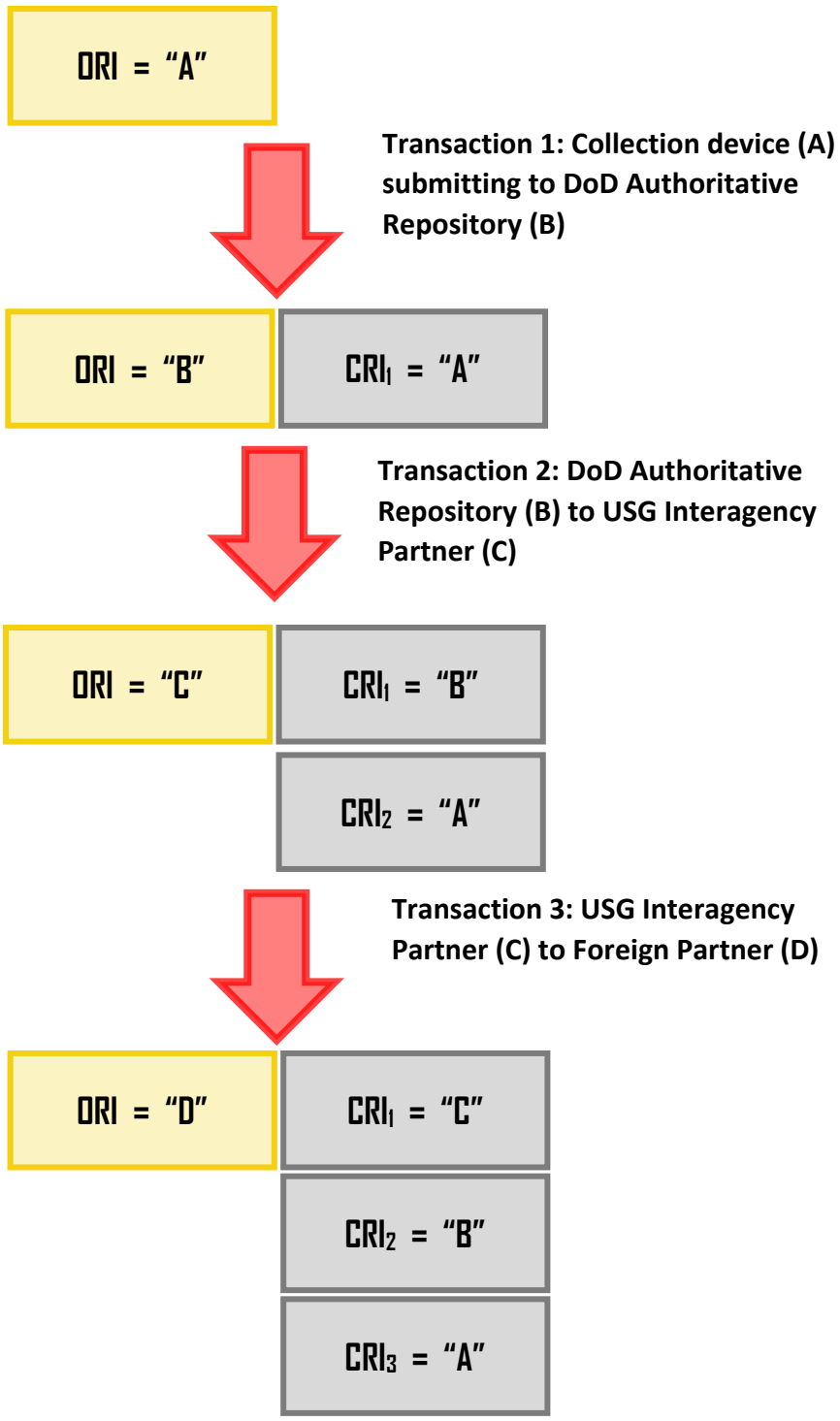

Figure 13: ORI/CRI Chain of Custody Example

3.9 Tagged Fields and Separator Characters

In the construction and interpretation of the logical record, the tag number should not be taken as having a fixed number of digits. The format for each field consists of the logical record type number followed by a period (.), a field number followed by a colon (:), followed by the information appropriate to that field. The tagged-field number can be any one- to nine-digit string occurring between the period and the colon. It shall be interpreted as an unsigned integer field number. This implies that a field number of 2.123 is equivalent to and shall be interpreted in the same manner as a field number of 2.00000123. For example, in this version of the standard, Type-2 logical record field tags are shown as having three or four digits between the decimal point and colon (2.NNN:data or 2.NNNN:data). The field numbers should be parsed as all digits between the period and colon. In the construction and interpretation of the logical record, there is no requirement that the tagged fields be present within the logical record in any given order, with the exception of the Length (LEN) and Image Designation Character (IDC), which must be in the first and second position in the record, respectively. However, for those record types conveying image data (e.g., 13.999: DATA), the data field will always be the last field in the string.

Separator characters may best be understood by considering them necessary for what follows them, not what precedes them. Thus, when a tagged field includes subfields and another subfield is still to follow, the following subfield must be separated from the one preceding it by the unit separator character. If what is to follow is a repetition of a field or group of subfields, a record separator must separate the preceding field or group of subfields from the repetition to follow. If what is to follow is a new field, then the group separator character is used. If the record is complete after the previous field, the file separator is used.

Per ITL 1-2013, successive separator characters may be used with no intervening blank or other character when a subfield is missing. In Type-2 records, DoD EBTS recognizes the following sequences as meaning that a subfield is missing: <US><US>, <US><RS>, <US><GS>, and

<US><FS>. These are needed to obviate the need for the receivers of transactions to validate each subfield in a grouped field to see whether it contains valid data or is merely a blank.

3.10 Error Handling

In the interpretation of a transaction, fields that are not defined for the requested transaction are to be ignored; their inclusion is not to be considered an error.

Fields should not be transmitted when there is no value present (e.g., ... 2.033:<GS> ...). However, receipt of such an empty field, if the field is not mandatory, should not result in rejection of the submission or issuance of an error message. Rejection may occur, however, when missing or incorrect data would frustrate processing of the transaction.

Systems that receive transactions (submissions or responses) shall ignore data that are not defined in the DoD EBTS or appropriate application profile. The Figure below defines the actions that shall be taken when unrecognized data are received.

Error Condition	Action
Unrecognized TOT (as indicated by field 1.004 TOT)	Return an "Unauthorized EBTS Transaction" transaction error response to the submitter.
Unrecognized Record (the binary or tagged-field record is not a Type-1, Type-2, Type-9, Type-10, Type-11, Type-13, Type-14, Type-15, Type-17, Type-18, Type-20, Type-21, Type-98 or Type-99)	Complete transaction and return appropriate response to the submitter. Ignore the unrecognized record and complete the transaction with appropriate response.
Unrecognized Field	Complete transaction and return appropriate response to the submitter. Ignore the unrecognized field and complete the transaction with appropriate response.

Figure 14: Error Handling Chart

Error Condition	Action
Unrecognized Subfield	Complete transaction and return appropriate response if possible. Otherwise, return an "EBTS Field Parse Error" transaction error response to the submitter.
Unrecognized Data in Tagged-Field Record	Complete transaction and return appropriate response if possible. Otherwise, return an "EBTS Field Parse Error" transaction error response to the submitter.

Figure 13: Error Handling Chart (Cont.)

3.11 Image Quality and Image Sets Requirements

In the interest of maintaining an accurate and usable database of biometric data, minimum image quality requirements must be followed for images submitted in DoD EBTS transactions.

Fingerprint Image Quality and Image Sets (Type-14)

Fingerprint image quality requirements are defined in Appendix F of the FBI EBTS v10.0. From an image quality perspective only, any system certified by the FBI for use with NGI meets DoD EBTS image quality requirements.

Rolled fingerprint samples shall be captured with each finger rolled from one side of the fingernail to the other. The collection of a "complete set" of fingerprint samples shall include any of the following image submissions:

14 Images:

- Rolled or Flat image of each of the 10 fingers
- One Four Finger Slap image of the right hand (no thumb)
- One Four Finger Slap image of the left hand (no thumb)
- One Flat image of the right thumb
- One Flat image of the left thumb

13 Images:

Rolled or Flat image of each of the 10 fingers

One Four Finger Slap image of the right hand (no thumb)

One Four Finger Slap image of the left hand (no thumb)

One Two Thumb Slap Fingerprint image

10 Images:

Rolled or Flat image of each of the 10 fingers

An explanation for any required but missing fingerprints shall be provided in field 14.018 Amputated or Bandaged. Field 14.018 shall accurately represent the reason for each missing fingerprint. This field has two subfields: Finger Position Code (FGP) and Amputated or Bandaged Code (AMPCD). Both subfields are required if field 14.018 is present. Subfield FGP is a two-digit code that specifies which finger is missing. Subfield AMPCD uses the value "XX" when there is an actual amputation and the value "UP" (unable to print) for all other situations.

FBI EBTS identifies a Type-2, Field 2.084 Amputated or Bandaged (AMP) to indicate if the Type-14 fingerprint submission does not contain a full set of fingerprints as described above. DoD EBTS v4.0 recommends the use of ITL 1-2011 Field 14.018 in order to adhere to business rules developed for this standard. However, Field 2.084 should be used to include the contextual information if a Type-14 record is not submitted or to indicate why a slap image and/or plain thumb image is missing.

In addition, DoD EBTS v4.0 does not recommend the practice of stitching fingerprint images (e.g., the right and left thumb images were captured separately, but combined prior to transmission to create a single artificial two-thumb image). For devices which are not able to submit the four finger slap image and/or two thumb slap image due to limitations on the capturing device, the AMP field shall instead be populated to indicate the Finger Position Code and Amputated or Bandaged Code.

Palmprint Image Quality and Image Sets (Type-15)

Palmprint image quality requirements shall follow the same image requirements and compression standards as identified for fingerprint image quality. All palmprint images shall be acquired directly from a subject using a live-scan device or approved palmprint card. Whichever method is used should be capable of providing a set of images for each hand.

A complete palmprint set contains the following images for both hands:

- One writer's palm image from each hand
- Either one full palm image (the entire area of the full palm extending from the wrist bracelet to the tips of the fingers) from each hand or
- One upper palm image from each hand (extends from the bottom of the interdigital area to the upper tips of the fingers) and one lower palm image (shall extend from the wrist bracelet to the top of the interdigital area (third finger joint) from each hand or
- One palm thenar area image, one palm hypothenar area image, and one palm interdigital area image from each hand.

An explanation for any missing palmprint images is optional. Field 15.018 and its associated subfields shall be used to indicate any missing images. The Type-2 Field 2.8112 has been added to EBTS v3.0 and may be used to indicate if a Type-15 record is not able to be submitted.

Facial Photo Image Quality and Image Sets (Type-10)

All photographs shall be taken using a color camera. The camera lens orientation (photographer) shall be pointed to the front of the person, aligned approximately in the center of the face, and taken from a distance of approximately five feet. The orientation(s) of the person for facial photos shall be taken from the following options:

- Frontal view (also known as full-frontal pose);
- 90 degrees left side;
- 45 degrees left side;
- 90 degrees right side; or
- 45 degrees right side.

When photographed, the person shall not be allowed to wear any glasses, sunglasses, or other items obscuring the area photographed. The person may choose to expose only the area from ear to ear and hairline to chin (for example, to not require the removal of a headdress). There are no constraints on cosmetics.

The full frontal pose should be captured in accordance with one of the following:

- ANSI INCITS 385-2004, "Face Recognition Format for Data Interchange", clauses 8.2, 8.3, and 8.4 (The Full Frontal Image Type). NOTE: this document may be retired in favor of the
  ISO document below; or
- Annex A, Best Practices for Basic Face Images, of ISO/IEC 19794-5, Information technology — Biometric data interchange formats — Part 5: Face Image Data.

Iris Image Quality and Image Sets (Type-17)

An iris record shall contain an image of a single iris. Note: this does not imply that image capture equipment must be used twice to collect two images. If a single image of both the left and right eye is captured, further processing must result in two separate records.

Images should be captured in accordance with Annex A, Iris Image Capture, of ISO/IEC 19794-6, Information technology — Biometric data interchange formats — Part 6: Iris image data.

4 Record Layout Tables

The following tables are snapshots of each ANSI/NIST ITL Record Type, and include only a minimal set of representative data for each field, subfield, or information item. They were included in order to enhance user awareness of the standard, and are to be used as an easy way to reference basic information within a given field. For normative information about each data element within a field, refer to the Integrated Data Dictionary v6.0.

- **Repeating Subfields Designator**

- In the ANSI (American National Standards Institute) NIST (National Institute of Standards and Technology) 1-2011: Update 2013 field guidance table a new field was introduced to designate repeating subfields of information. The repeating subfield ID and Mnemonic will be indicated with and _0 designator.

- **Hierarchical Arrows (Conditionality)**
  - New in the ANSI NIST 2011: Update 2013 field tables are hierarchical dependency arrow indicators located in the Optional field. The DoD EBTS IDD page construct has also chosen to include this new morphological field construct.

- **Traditional vs. XML Encoding Differences:**
  - Where the content or structure of a field or information item would differ between Traditional (Binary) and XML encodings, they are differentiated by a "T =" or "X =" preceding the information.
  - For example, Field 13.001:

Field Min	Field Max	Value Constraints
T = 4; X = 1	T = 8; X = 2	T = positive integer; X = <RecordCategoryCode>

- **Character Types:**
  - Dep. = Dependent upon encoding (Traditional vs XML)
  - "A", "N", "S", and "U" are sets of ANSI/NIST ITL defined character types.

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
1.001	Record Header		LEN	M	Encoding Specific	Encoding Specific	1	1	N
1.002	Version Number		VER	M	T = 4 ; X = 3	4	1	1	N
1.003	Transaction Content		CNT	M	n/a	n/a	1	1	n/a
1.003_0	Transaction Content	Subfield: Single set of information items	CNT_0	M	n/a	n/a	1	1	n/a
1.003_1a	Transaction Content	First Record Category Code	FRC	M	1	1	1	1	N
1.003_1b	Transaction Content	Content Record Count	CRC	M	1	3	1	1	N
1.003_2	Transaction Content	Content Record Summary	REC	M	n/a	n/a	1	*	n/a
1.003_2a	Transaction Content	Subfield: Single set of information items	REC_0	M	n/a	n/a	1	*	n/a
1.003_2a	Transaction Content	Record Category Code	REC	M	1	2	1	1	N
1.003_2b	Transaction Content	Information Designation Character	IDC	M	1	2	1	1	N
1.004	Type of Transaction		TOT	M	Encoding Specific	Encoding Specific	1	1	A
1.005	Date		DAT	M	Encoding Specific	Encoding Specific	1	1	N
1.006	Priority		PRY	O	1	1	0	1	N
1.007	Destination Agency Identifier		DAI	M	1	Unlimited	1	1	ANS
1.008	Originating Agency Identifier		ORI	M	1	Unlimited	1	1	ANS
1.009	Transaction Control Number		TCN	M	1	Unlimited	1	1	ANS
1.01	Transaction Control Reference		TCR	O	1	Unlimited	0	1	ANS
1.011	Native Scanning Resolution		NSR	M	T = 5; X = 4	5	1	1	NS
1.012	Nominal Resolution		NTR	M	T = 5; X = 4	5	1	1	NS
1.013	Domain Name		DOM	O	n/a	n/a	0	1	n/a
1.013_1	Domain Name	Domain Name Implementation	DNM	M↑	1	Unlimited	1	1	ANS
1.013_2	Domain Name	Domain Name Implementation Version	DVN	O↑	1	Unlimited	0	1	ANS
1.014	Greenwich Mean Time		GMT	O	Dependent upon encoding	Dependent upon encoding	0	1	AN
1.015	Application Profile Specifications	Character Encoding	DCS	O	n/a	n/a	0	1	n/a
1.015_0	Application Profile Specifications	Subfield: A single set of information items	DCS_0	M↑	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
1.015_1	Character Encoding	Character Encoding Set Index	CSI	M↑	1	3	0	1	N
1.015_2	Character Encoding	Character Encoding Set Name	CSN	M↑	1	16	1	1	ANS
1.015_3	Character Encoding	Character Encoding Set Version	CSV	O	1	16	1	1	ANS
1.016	Application Profile Specifications		APS	O	n/a	n/a	0	1	n/a
1.016_0	Application Profile Specifications	Subfields: Repeating sets of information items	APS_0	M↑	n/a	n/a	0	99	n/a
1.016_1	Application Profile Specifications	Application Profile Specifications	APO	M↑	1	Unlimited	0	99	ANS
1.016_2	Application Profile Specifications	Application Profile Name	APN	M↑	1	Unlimited	0	99	ANS
1.016_3	Application Profile Specifications	Application Profile Version Number	APV	M↑	1	Unlimited	0	99	ANS
1.017	Agency Names		ANM	O	n/a	n/a	1	1	n/a
1.017_1	Agency Names	Destination Agency Name	DAN	O↑	1	Unlimited	0	1	ANS
1.017_2	Agency Names	Originating Agency Name	OAN	O↑	1	Unlimited	0	1	ANS
1.018	Geographic Name Set		GNS	O	3	4	0	1	AN
2.001	Record Header		LEN	M	T = 2; X = 1	T = 8; X = 2	1	1	N
2.002	Information Designation Character		IDC	M	1	2	1	1	N
2.003	FBI File Number		FFN	n/a	10	10	0	1	N
2.005	Retention Code		RET	O	1	1	0	1	A
2.006	Attention Indicator		ATN	O	3	30	0	1	ANS
2.007	Send Copy to		SCO	O	9	19	0	9	ANS
2.009	Originating Agency Case Number		OCA	O	1	20	0	1	ANS
2.01	Contributor Case Identifier Number		CIN	O	n/a	n/a	1	5	n/a
2.010_0	Contributor Case Identifier Number	Subfields: Repeating sets of information items	CIN_0	M↑	n/a	n/a	1	5	n/a
2.010_1	Contributor Case Identifier Number	Contributor Case Identifier Prefix	CIN_PRE	M↑	1	24	1	1	ANS
2.010_2	Contributor Case Identifier Number	Contributor Case Identifier	CIN_ID	M↑	1	24	1	1	ANS
2.013	Latent Case Number Extension		LCX	O	5	5	1	1	N
2.014	FBI Number UCN		FBI	O	1	9	0	1000	AN
2.015	State Identification Number		SID	O	3	10	0	1000	ANS
2.016	Social Security Account Number		SOC	O	9	9	0	4	N
2.017	Miscellaneous Identification Number		MNU	O	4	15	0	4	ANS
2.018	Name Legacy		NAM	O	n/a	n/a	0	1	AS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.018_1	Name Legacy	Surname	NAM1	O	3	50	1	1	AS
2.018_2	Name Legacy	Given Name	NAM2	O	3	50	0	1	AS
2.018_3	Name Legacy	Middle Name	NAM3	O	3	50	0	1	AS
2.019	Aliases Legacy		AKA	O	3	50	0	1	AS
2.02	Place of Birth		POB	O	2	2	0	1	A
2.021	Country of Citizenship		CTZ	O	2	2	0	10	A
2.022	Date of Birth		DOB	O	8	8	0	5	N
2.023	Age Range		AGR	O	4	4	0	1	N
2.024	Sex		SEX	O	1	1	0	1	A
2.025	Race Legacy		RAC	O	1	1	0	1	A
2.026	Scars, Marks and Tattoos		SMT	O	3	10	0	10	AS
2.027	Height Legacy		HGT	O	3	3	1	1	AN
2.028	Height Range		HTR	O	6	6	1	1	AS
2.029	Weight Legacy		WGT	O	3	3	1	1	N
2.03	Weight Range		WTR	O	6	6	1	1	N
2.031	Color Eyes		EYE	O	3	3	0	1	A
2.032	Hair Color		HAI	O	3	3	0	1	AS
2.034	Pattern Level Classifications		PAT	O	n/a	n/a	0	1	n/a
2.034_0	Pattern Level Classifications	Subfields: Repeating sets of information items	PAT_0	M↑	n/a	n/a	1	10	n/a
2.034_1	Pattern Level Classifications	Finger Number	FGP	M↑	2	2	1	10	N
2.034_2	Pattern Level Classifications	Pattern Classification Code	PATCL	M↑	2	2	1	1	A
2.035	Palmprints Available Indicator		PPA	O	1	1	0	1	A
2.038	Date Printed		DPR	O	8	8	0	1	N
2.039	Employer and Address		EAD	O	1	120	0	1	ANS
2.04	Occupation		OCP	O	1	50	0	1	U
2.041	Residence of Person Fingerprinted		RES	O	1	120	0	1	ANS
2.042	Military Code		MIL	O	1	1	0	1	A
2.043	Type of Search Requested		TSR	O	1	1	0	1	A
2.045	Date of Arrest		DOA	O	8	8	0	1	N
2.046	Date of Arrest - Suffix		DOS	O	1	1	0	1	A
2.047	Arrest Segment Literal		ASL	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.047_0	Arrest Segment Literal	Subfields: Repeating sets of information items	ASL_0	M↑	n/a	n/a	0	40	n/a
2.047_1	Arrest Segment Literal	Date of Offense	DOO	O	8	8	0	1	N
2.047_2	Arrest Segment Literal	Arrest Offense Literal	AOL	M↑	1	300	1	1	ANS
2.051	Court Segment Literal		CSL	O	n/a	n/a	0	1	n/a
2.051_0	Court Segment Literal- Subfields: Repeating sets of information items		CSL_0	O	n/a	n/a	0	40	n/a
2.051_1	Court Segment Literal	Court Disposition Date	CDD	O	8	8	0	1	N
2.051_2	Court Segment Literal	Court Offense Literal	COL	M↑	1	300	1	1	ANS
2.051_3	Court Segment Literal	Other Court Sentence Provision Literal	CPL	M↑	1	300	1	1	ANS
2.051_4	Court Segment Literal	Court Disposition	CDN	M↑	1	32	1	1	A
2.051_5	Court Segment Literal	Court Count Number	CCT	O	2	2	0	1	N
2.053	Offense Category		OFC	O	1	1	0	1	N
2.054	Custody or Supervisory Status Start Date		SSD	O	8	8	0	1	N
2.055	Custody or Supervisory Literal		SLE	O	1	300	0	1	ANS
2.056	Identification Comments		ICO	O	1	50	0	1	ANS
2.057	Finger Numbers Requested		FNR	O	2	2	0	13	N
2.059	Search Results Findings		SRF	O	1	1	0	1	A
2.06	Status/Error Message		MSG	O	1	300	0	1000	ANS
2.061	Case Title		CST	O	1	50	0	1	AS
2.062	Image Type		IMT	O	1	2	0	1000	N
2.064	Candidate List		CAN	O	n/a	n/a	0	1	n/a
2.064_0	Candidate List	Subfields: Repeating sets of information items	CAN_0	O	n/a	n/a	1	99	n/a
2.064_1	Candidate List	Universal Control Number	SI	M↑	1	9	1	1	AN
2.064_2	Candidate List	Name	NAM	M↑	3	30	1	1	AS
2.065	Repository Statistics Response		RSR	O	1	96000	0	1	ANS
2.067	Image Capture Equipment		IMA	O	n/a	n/a	0	1	n/a
2.067_1	Image Capture Equipment	Image Capture Equipment Legacy Derivable	MAK	M↑	1	25	1	1	ANS
2.067_2	Image Capture Equipment	Originating Fingerprint Reading System Model Legacy Derivable	MODL	M↑	1	25	0	1	ANS
2.067_3	Image Capture Equipment	Originating Fingerprint Reading System Model Legacy Derivable	SERNO	M↑	1	50	0	1	ANS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.07	Request for Electronic Rap Sheet		RAP	O	1	1	0	1	A
2.071	Action to be Taken		CAN	O	0	300	0	1	ANS
2.072	Fingerprint Images Updated		FIU	O	1	2	0	13	AN
2.073	Controlling Agency Identifier		CRI	O	9	9	0	99	ANS
2.074	Finger Numbers Requested	Finger Position	FGP	O	2	2	1	10	N
2.075	Electronic Rap Sheet		ERS	O	4	200000	0	1	ANS
2.078	Penetration Query Response		PEN	O	2	0	0	1	N
2.079	Number of Candidates' Images Returned		NCR	O	1	2	0	1	N
2.08	Response Explanation		EXP	O	1	50	0	1	ANS
2.082	Response Code		REC	O	1	1	0	1	A
2.083	Unsolved Latent File		ULF	O	1	1	0	1	A
2.084	Amputated or Bandaged		AMP	O	n/a	n/a	0	1	n/a
2.084_0	Amputated or Bandaged	Subfields: Repeating sets of information items	AMP_0	O	n/a	n/a	0	13	n/a
2.084_1	Amputated or Bandaged	Finger Position Code	FGP	M↑	2	2	1	1	N
2.084_2	Amputated or Bandaged	Amputated or Bandaged Code	AMPCD	M↑	2	2	1	1	A
2.086	AFIS Segment Control Number		SCNA	O	1	10	0	1	AN
2.087	Treat As Adult		TAA	O	1	1	0	1	A
2.088	Note Field		NOT	O	1	1000	0	1	ANS
2.089	Match Score		MSC	O	1	6	0	1	N
2.091	Ridge Core Delta One for Subpattern Classification		RCD1	O	n/a	n/a	0	1	n/a
2.091_0	Ridge Core Delta One for Subpattern Classification	Subfields: Repeating sets of information items	RCD1_0	M↑	n/a	n/a	0	1	n/a
2.091_1	Ridge Core Delta One for Subpattern Classification	Finger Position Code	FGP	M↑	2	2	1	10	N
2.091_2	Ridge Core Delta One for Subpattern Classification	First Subpattern Ridge Count	RCN1	M↑	1	2	0	2	N
2.092	Ridge Core Delta Two for Subpattern Classification		RCD2	O	n/a	n/a	0	1	n/a
2.092_0	Ridge Core Delta Two for Subpattern Classification	Subfields: Repeating sets of information items	RCD2_0	M↑	n/a	n/a	0	1	n/a
2.092_1	Ridge Core Delta Two for Subpattern Classification	Finger Position Code	FGP	M↑	2	2	1	10	N
2.092_2	Ridge Core Delta Two for Subpattern Classification	Second Subpattern Ridge Count	RCN2	M↑	1	2	0	2	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.095	Repository Statistics Response		RFR	O	1	1	0	1	A
2.096	Request Photo Record		RPR	O	1	1	0	1	A
2.098	Name of Designated Repository		NDR	O	1	3	0	10	N
2.3	BAT Global Unique Identifier		GUID	O	36	38	0	1	ANS
2.302	Internment Serial Number		ISN	O	15	16	0	1	ANS
2.303	DoD Number		DOD_NO	O	1	9	0	5	AN
2.308	Electronic Data Interchange Personal Identifier		EDIPI	O	1	50	0	1	ANS
2.309	Defense Biometric Identification System Identifier		DBIDS_ID	O	10	50	0	1	ANS
2.31	Biometric Subject Personnel Type		PER_TYPE	O	3	50	0	47	AS
2.316	Request Mug Shot		RMS	O	1	1	0	1	A
2.317	Request IAFIS Search		RIS	O	1	1	0	1	A
2.318	XML-based Rap Sheet		XML	O	4	400000	0	1	ANS
2.334	Submission Color Code		SCC	O	3	3	0	1	A
2.335	Dossier Number		DOSSIER	O	1	50	0	1	ANS
2.35	Alert		ALERT	O	n/a	n/a	0	1	n/a
2.350_0	Alert	Subfields: Repeating sets of information items	ALERT_0	M↑	n/a	n/a	1	*	n/a
2.350_1	Alert	Alert Function	ALERT_FUN	M↑	1	1	1	1	N
2.350_2	Alert	Alert Category	ALERT_CAT	M↑	1	1	1	1	N
2.350_3	Alert	Alert Value	ALERT_VAL	M↑	1	1	1	1	N
2.350_4	Alert	Alert Contact	ALERT_CONTACT	M↑	1	80	1	1	U
2.350_5	Alert	Alert Detail	ALERT_DETAIL	M↑	1	255	0	1	U
2.351	Encounter Protection		EP	O	Encoding Specific	Encoding Specific	0	1	n/a
2.351_1	Encounter Protection	Encounter Protection Function	EP_FUN	M↑	1	1	1	1	N
2.351_2	Encounter Protection	Encounter Protection Level	EP_LEVEL	M↑	1	1	1	1	N
2.85	Biometric Modality Available		BIO_MOD_0	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.850_0	Biometric Modality Available	Subfields: Repeating sets of information items	BIO_MOD	O	n/a	n/a	0	*	n/a
2.850_1	Biometric Modality Available	Modality Type	MOD_TYPE	O	3	6	0	1	A
2.850_2	Biometric Modality Available	Modality Sub-Type	MOD_STYPE	O	1	5	0	1	AN
2.850_3	Biometric Modality Available	Name of Designated Repository	MOD_REPO	O	1	3	0	1	N
2.850_4	Biometric Modality Available	Modality Location Originating Agency Identifier	MOD_LOC	O	9	9	1	1	AN
2.850_5	Biometric Modality Available	Modality Retrieval Identifier Type	MOD_ID_TYPE	O	1	50	0	1	A
2.850_6	Biometric Modality Available	Modality Retrieval Identifier	MOD_ID	O	1	50	0	1	U
2.850_7	Biometric Modality Available	Comment	MOD_COM	O	1	126	0	1	U
2.851	Biometric Modality Request		BIO_MODR	O	n/a	n/a	0	1	n/a
2.851_1	Biometric Modality Request	Modality Type	MODR_TYPE	M↑	3	6	1	1	A
2.851_2	Biometric Modality Request	Modality Sub-Type	MODR_SUBTYPE	O	1	5	0	1	AN
2.851_3	Biometric Modality Request	Name of Designated Repository	MODR_REPO	O	1	3	0	1	N
2.851_4	Biometric Modality Request	Modality Location Originating Agency Identifier	MODR_AGENCY	O	9	9	1	1	AN
2.851_5	Biometric Modality Request	Modality Retrieval Identifier Type	MODR_ID_TYPE	O	1	50	0	1	A
2.851_6	Biometric Modality Request	Modality Retrieval Identifier	MODR_ID	O	1	50	0	1	U
2.851_7	Biometric Modality Request	Requested Image Quantity	MODR_QUAL	O	0	2	0	1	N
2.852	Biometric Subject Body Build		SUBJ_BUILD	O	1	1	0	1	A
2.853	Biometric Subject Education		SUBJ_ED	O	2	2	0	1	N
2.854	Collection Unit		SUBJ_SPEC	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.854_1	Collection Unit	Superior Unit	SUBJ_SPEC_VAL	M↑	1	50	1	1	U
2.854_2	Collection Unit	SubSuperior Unit	SUBJ_SPEC_PRO	O	1	50	0	1	U
2.855	Military Association		MIL_ASSOC	O	n/a	n/a	0	1	n/a
2.855_1	Military Association	Military Branch Country Code	MIL_CNTRY	M↑	2	3	1	1	AN
2.855_2	Military Association	Military Branch Name	MIL_BRNCH	M↑	1	50	1	1	U
2.855_3	Military Association	Rank Grade Code	MIL_RANK	O	1	20	0	1	ANS
2.855_4	Military Association	Military Active Indicator	MIL_IND	O	1	1	0	1	A
2.856	Previous Transaction	Identification	PREV_TRAN	O	n/a	n/a	0	1	n/a
2.856_1	Previous Transaction	Identifier Type	PREV_TRAN_1	M↑	1	20	1	1	A
2.856_2	Previous Transaction	Previous Transaction Identifier	PREV_TRAN_2	M↑	1	100	1	1	ANS
2.856_3	Previous Transaction	Transaction Association	PREV_TRAN_3	O	1	100	0	1	ANS
2.858	Vendor Software		SOFT_VEN	O	n/a	n/a	0	1	n/a
2.858_0	Vendor Software	Subfields: Repeating sets of information items	SOFT_VEN_0	M↑	n/a	n/a	1	99	n/a
2.858_1	Vendor Software	Software Vendor Name	SOFT_VEN_1	M↑	1	50	1	1	U
2.858_2	Vendor Software	Software Application Name	SOFT_VEN_2	O	1	50	1	1	U
2.858_3	Vendor Software	Software Application Version Number	SOFT_VEN_3	O	1	255	1	1	U
2.859	Biometric Subject Previous Residence		SUBJ_PREV_RESIDE	O			0	1	n/a
2.859_1	Biometric Subject Previous Residence	Address Line 1	SUBJ_PREV_RESIDE_1	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.859_2	Biometric Subject Previous Residence	Address Line 2	SUBJ_PREV_RESIDE_2	O	1	50	0	1	U
2.859_3	Biometric Subject Previous Residence	City	SUBJ_PREV_RESIDE_3	O	1	50	0	1	U
2.859_4	Biometric Subject Previous Residence	State / Province	SUBJ_PREV_RESIDE_4	O	1	50	0	1	U
2.859_5	Biometric Subject Previous Residence	Country Code	SUBJ_PREV_RESIDE_5	O	3	3	0	1	A
2.859_6	Biometric Subject Previous Residence	Postal Code	SUBJ_PREV_RESIDE_6	O	1	50	0	1	ANS
2.859_7	Biometric Subject Previous Residence	Neighborhood / District	SUBJ_PREV_RESIDE_7	O	1	50	0	1	U
2.859_8	Biometric Subject Previous Residence	Village	SUBJ_PREV_RESIDE_8	O	1	50	0	1	U
2.859_9	Biometric Subject Previous Residence	Address Validity	SUBJ_PREV_RESIDE_9	O	3	3	0	1	A
2.859_10	Biometric Subject Previous Residence	Start Date	SUBJ_PREV_RESIDE_10	O	Encoding Specific	Encoding Specific	0	1	N
2.859_11	Biometric Subject Previous Residence	End Date	SUBJ_PREV_RESIDE_11	O	Encoding Specific	Encoding Specific	0	1	N
2.201	Number of Images Requested		NIR	O	1	2	0	1	N
2.2022	Contributor Assigned Identification Number		CIDN	O	10	10	0	1	AN
2.2023	Supplementary Identity Information		SII	O	4	10000	0	1	ANS
2.2024	Hit Type Indicator		HTI	O	1	10	0	1	A
2.2028	Biometric Image Description		BID	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.2028_0	Biometric Image Description	Subfields: Repeating sets of information items	BID_0	O	n/a	n/a	1	1000	n/a
2.2028_1	Biometric Image Description	FBI Number/UCN	SI	O	1	50	1	1	ANS
2.2028_2	Biometric Image Description	Image Type	IMT	M↑	1	2	0	1	N
2.2028_3	Biometric Image Description	Biometric Set Identifier	BSI	O	4	24	0	1	N
2.2028_4	Biometric Image Description	Friction Ridge Position Requested	FNR	O	2	2	0	1	N
2.2028_5	Biometric Image Description	Print Position Descriptors	PPD	O	5	5	0	1	AN
2.2028_6	Biometric Image Description	Pose Code	POS	O	1	1	0	1	A
2.2028_7	Biometric Image Description	SMT Code	SMT	O	3	10	0	1	A
2.2029	Biometric Set Identifier		BSI	O	4	24	0	1000	N
2.2030	Print Position Descriptors		PPD	O	n/a	n/a	0	10	n/a
2.2030_1	Print Position Descriptors	Friction Ridge Generalized Position	FGP	M↑	1	2	1	1	N
2.2030_2	Print Position Descriptors	Finger Image Code	FIC	M↑	3	3	1	1	AN
2.2031	Biometric Image Available		BIA	O	1	2	0	6	N
2.2032	Audit Trail Record		ATR	M↑	n/a	n/a	0	1	n/a
2.2032_0	Audit Trail Record	Subfields: Repeating sets of information items	ATR_0	M↑	n/a	n/a	1	100	n/a
2.2032_1	Audit Trail Record	Originating Agency Identifier	ORI	M↑	9	9	1	1	AN
2.2032_2	Audit Trail Record	Date of Dissemination	DAT	O	8	8	1	1	N
2.2032_3	Audit Trail Record	TOT of Dissemination	TOT	O	3	5	1	1	A
2.2032_4	Audit Trail Record	Biometric Set Identifier Disseminated	BSI	O	4	24	0	1	N
2.2032_5	Audit Trail Record	Image Type Disseminated	IMT	O	1	2	0	1	N
2.2032_6	Audit Trail Record	Friction Ridge Position Requested	FNR	O	2	2	0	1	N
2.2032_7	Audit Trail Record	Print Position Descriptors	PPD	O	5	5	0	1	AN
2.2032_8	Audit Trail Record	Subject Pose	POS	O	1	1	0	1	A
2.2032_9	Audit Trail Record	NCIC SMT Code	SMT	O	3	10	0	1	A
2.2033	Candidate Investigative List		CNL / CAN	O	n/a	n/a	0	1	n/a
2.2033_0	Candidate Investigative List	Subfields: Repeating sets of information items	CNL_0 / CAN_0	M↑	n/a	n/a	0	3	n/a
2.2033_1	Candidate Investigative List	FBI Number/UCN	SI	M↑	1	50	1	1	ANS
2.2033_2	Candidate Investigative List	Master Name	NAM	O	3	50	0	1	AS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.2033_3	Candidate Investigative List	Biometric Set Identifier	BSI	O	4	24	0	1	N
2.2033_4	Candidate Investigative List	Image Type	IMT	O	1	2	0	1	N
2.2033_5	Candidate Investigative List	Friction Ridge Generalized Position	FGP	O	2	2	0	1	N
2.2033_6	Candidate Investigative List	Print Position Descriptors [Type-2, subfield to fields of Type Set]	PPD	O	5	5	0	1	AN
2.2033_7	Candidate Investigative List	Match Score	MSC	O	1	6	0	1	N
2.2033_8	Candidate Investigative List	Biometric Image Available	BIA	O	1	2	0	1	N
2.2033_9	Candidate Investigative List	Name of Designated Repository	NDR	O	1	400	0	1	N
2.2033_10	Candidate Investigative List	Information Designation Character	IDC	O	2	2	0	1	N
2.2033_11	Candidate Investigative List	Note Field	NOT	O	1	1000	0	1	ANS
2.2033_12	Candidate Investigative List	Subject Pose	POS	O	1	1	0	1	ANS
2.2033_13	Candidate Investigative List	SMT Code	SMT	O	3	10	0	1	ANS
2.2034	Unsolved Latent Retained		ULR	O	1	1	0	1	A
2.8003	Biometric Subject Birth Date		SUBJ_BIRTHDATE	O	n/a	n/a	0	1	n/a
2.8003_0	Biometric Subject Birth Date	Subfields: Repeating sets of information items	SUBJ_BIRTHDATE_0	O	n/a	n/a	0	5	n/a
2.8003_1	Biometric Subject Birth Date	Birth Date	DOB	M↑	Dependent on Encoding	Dependent on Encoding	0	1	ANS
2.8003_2	Biometric Subject Birth Date	Date Validity	DATEVLD	O	3	3	0	1	A
2.8003_3	Biometric Subject Birth Date	Calendar Type	CALTYP	O	1	1	0	1	A
2.8005	Biometric Subject Death Date		SUBJ_DEATHDATE	O	n/a	n/a	0	1	n/a
2.8005_1	Biometric Subject Death Date	Death Date	DOD	M↑	Dependent on Encoding	Dependent on Encoding	1	1	ANS
2.8005_2	Biometric Subject Death Date	Date Validity	DATEVLD	O	3	3	0	1	A
2.8005_3	Biometric Subject Death Date	Calendar Type	CALTYP	O	1	1	0	1	A
2.8007	Biometric Subject Citizenship		SUBJ_CTZ	O	3	3	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8008	Biometric Subject Ethnic/Racial Characteristic		SUBJ_RAC	O	1	2	0	3	A
2.8013	Biometric Subject Blood Type		SUBJ_BLOOD	O	n/a	n/a	0	1	n/a
2.8013_0	Biometric Subject Blood Type	Subfields: Repeating sets of information items	SUBJ_BLOOD_0	O	n/a	n/a	0	3	n/a
2.8013_1	Biometric Subject Blood Type	Blood Type Code	BLTCD	M↑	4	5	1	1	A
2.8013_2	Biometric Subject Blood Type	Blood Type Validity	BLTVLD	O	3	3	0	1	A
2.8014	Biometric Subject Vital Status		SUBJ_VITAL_0	O	n/a	n/a	0	1	n/a
2.8014_0	Biometric Subject Vital Status	Subfields: Repeating sets of information items	SUBJ_VITAL	O	n/a	n/a	0	3	n/a
2.8014_1	Biometric Subject Vital Status	Vital Status Validity	VSVLD	M↑	3	3	0	1	A
2.8014_2	Biometric Subject Vital Status	Vital Status Code	VSCD	O	1	1	1	1	A
2.8016	Biometric Subject Marital Status		SUBJ_MARITAL	O	3	3	0	1	A
2.8019	Collected Identification		COL_IDENT	O	n/a	n/a	0	1	n/a
2.8019_0	Collected Identification	Subfields: Repeating sets of information items	COL_IDENT_0	O	n/a	n/a	0	100	n/a
2.8019_1	Collected Identification	Collected Identification Type	CITYP	O	2	6	0	4	A
2.8019_2	Collected Identification	Collected Identification Identifier	CIID	O	1	100	0	1	U
2.8019_3	Collected Identification	Collected Identification Issuance Organization	CII	O	1	100	0	1	U
2.8019_4	Collected Identification	Collected Identification Issuance Date	CIISSDT	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8019_5	Collected Identification	Collected Identification Expiration Date	CIEXPDT	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8019_6	Collected Identification	Collected Identification Issuance Office	CIISSOFF	O	1	100	0	1	U
2.8019_7	Collected Identification	Collected Identification Comment	CICOM	O	1	250	0	1	U
2.8021	Biometric Subject Clearance		SUBJ_CLEAR	O	n/a	n/a	0	1	n/a
2.8021_1	Biometric Subject Clearance	Clearance Code	CLRCD	M↑	0	1	1	1	A
2.8021_2	Biometric Subject Clearance	Clearance Validity	CLRVLD	O	0	1	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8022	Biometric Subject Compartments		SUBJ_COMPART	O	n/a	n/a	0	50	n/a
2.8022_1	Biometric Subject Compartments	Compartment Description	CMPDESC	M↑	1	50	1	1	U
2.8022_2	Biometric Subject Compartments	Compartments Validity	CMPVLD	O	3	3	0	1	A
2.8023	Biometric Subject Comment		SUBJ_COM	O	1	120	0	1	U
2.8024	Biometric Subject Specialty	Biometric Subject US Person Indicator	US_IND	O	1	1	0	1	A
2.8025	Biometric Subject Derogatory Comment		DEROG_COM	O	1	120	0	1	U
2.8026	Biometric Subject Alternate Name		SUBJ_AKA	O	n/a	n/a	0	1	n/a
2.8026_0	Biometric Subject Alternate Name	Subfields: Repeating sets of information items	SUBJ_AKA_0	O	n/a	n/a	0	10	n/a
2.8026_1	Biometric Subject Alternate Name	Person Alternate Name Category Code	NAMCATCD	M↑	3	4	1	1	A
2.8026_2	Biometric Subject Alternate Name	Name - One	NAM1	M↑	1	50	1	1	U
2.8026_3	Biometric Subject Alternate Name	Name - Two	NAM2	M↑	1	50	1	1	U
2.8026_4	Biometric Subject Alternate Name	Name - Three	NAM3	O	1	50	0	1	U
2.8026_5	Biometric Subject Alternate Name	Name - Four	NAM4	O	1	50	0	1	U
2.8026_6	Biometric Subject Alternate Name	Name - Five	NAM5	O	1	50	0	1	U
2.8026_7	Biometric Subject Alternate Name	Name Validity	NAME_VLD	O	3	3	0	1	A
2.8026_8	Biometric Subject Alternate Name	Transliteration Code	TRANSLIT_CD	O	4	6	0	1	A
2.8026_9	Biometric Subject Alternate Name	Comment	COM	O	1	126	0	1	U
2.8028	Employment		EMPLOY	O	n/a	n/a	0	1	n/a
2.8028_0	Employment	Subfields: Repeating sets of information items	EMPLOY_0	O	n/a	n/a	0	5	n/a
2.8028_1	Employment	Employer Name	EMPNAM	M↑	1	50	0	1	U
2.8028_2	Employment	Employee Position Name	POSNAM	O	1	50	0	1	U
2.8028_3	Employment	Address Line 1	ADD1	O	1	50	0	1	U
2.8028_4	Employment	Address Line 2	ADD2	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8028_5	Employment	City	CITY	O	1	50	0	1	U
2.8028_6	Employment	State / Province	STATE	O	1	50	0	1	U
2.8028_7	Employment	Country Code	CTRY	O	3	3	0	1	A
2.8028_8	Employment	Postal Code	POSTAL	O	1	50	0	1	ANS
2.8028_9	Employment	Village	VLG	O	1	50	0	1	U
2.8028_10	Employment	Phone Number	PHNUM	O	1	50	0	1	ANS
2.8028_11	Employment	Email Address	EMAIL	O	1	254	0	1	ANS
2.8028_12	Employment	Clearance Code	CLRCD	O	3	3	0	1	A
2.8028_13	Employment	Job Duties	DUTY	O	1	126	0	1	U
2.8028_14	Employment	Job Description	JOBDESC	O	1	126	0	1	U
2.8028_15	Employment	Supervisor Name	SUPV	O	1	100	0	1	U
2.8028_16	Employment	Start Date	STARTDATE	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8028_17	Employment	Start Date	ENDDATE	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8028_18	Employment	Comment	COM	O	1	126	0	1	U
2.8029	Biometric Subject Contact Email		SUBJ_EMAIL	O	1	254	0	1	ANS
2.8031	Biometric Subject Current Residence		SUBJ_ADDR	O	n/a	n/a	0	1	n/a
2.8031_1	Biometric Subject Current Residence	Address Line 1	ADD1	O	1	50	0	1	U
2.8031_2	Biometric Subject Current Residence	Address Line 2	ADD2	O	1	50	0	1	U
2.8031_3	Biometric Subject Current Residence	City	CITY	O	1	50	0	1	U
2.8031_4	Biometric Subject Current Residence	State / Province	STATE	O	1	50	0	1	U
2.8031_5	Biometric Subject Current Residence	Country Code	CTRY	O	3	3	0	1	A
2.8031_6	Biometric Subject Current Residence	Postal Code	POSTAL	O	1	50	0	1	ANS
2.8031_7	Biometric Subject Current Residence	Neighborhood / District	NEIG	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8031_8	Biometric Subject Current Residence	Village	VLG	O	1	50	0	1	U
2.8031_9	Biometric Subject Current Residence	Address Validity	ADDR_VLD	O	3	3	0	1	A
2.8032	Biometric Subject Contact Telephone		SUBJ_PHONE	O	n/a	n/a	0	1	n/a
2.8032_1	Biometric Subject Contact Telephone	Telephone Category Code	PH_TYP	O	2	2	0	1	A
2.8032_2	Biometric Subject Contact Telephone	Phone Number	PHNUM	O	1	50	0	1	ANS
2.8032_3	Biometric Subject Contact Telephone	Phone Extension	PHEXT	O	1	20	0	1	N
2.8033	Biometric Subject Birth Location		SUBJ_POB	O	n/a	n/a	0	1	n/a
2.8033_1	Biometric Subject Birth Location	City	CITY	O	1	50	0	1	U
2.8033_2	Biometric Subject Birth Location	State / Province	STATE	O	1	50	0	1	U
2.8033_3	Biometric Subject Birth Location	Country Code	CTRY	O	3	3	0	1	A
2.8033_4	Biometric Subject Birth Location	Village	VLG	O	1	50	0	1	U
2.8033_5	Biometric Subject Birth Location	Comment	COM	O	1	126	0	1	U
2.8034	Biometric Subject Death Location		SUBJ_POD	O	n/a	n/a	0	1	n/a
2.8034_1	Biometric Subject Death Location	City	CITY	O	1	50	0	1	U
2.8034_2	Biometric Subject Death Location	State / Province	STATE	O	1	50	0	1	U
2.8034_3	Biometric Subject Death Location	Country Code	CTRY	O	3	3	0	1	A
2.8034_4	Biometric Subject Death Location	Village	VLG	O	1	50	0	1	U
2.8034_5	Biometric Subject Death Location	Biometric Subject Death Location	COM	O	0	126	0	1	U
2.8035	Biometric Subject Height Measurement		SUBJ_HEIGHT	O	n/a	n/a	0	1	n/a
2.8035_1	Biometric Subject Height Measurement	Height Value	HGT	O	2	4	0	1	NS
2.8035_2	Biometric Subject Height Measurement	Length Unit	LENUNIT	O	1	4	0	1	A
2.8035_3	Biometric Subject Height Measurement	Measurement Validity	MEASVLD	O	3	3	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8036	Biometric Subject Weight Measurement		SUBJ_WEIGHT	O	n/a	n/a	1	1	n/a
2.8036_1	Biometric Subject Weight Measurement	Weight Value	WGT	O	1	3	0	1	N
2.8036_2	Biometric Subject Weight Measurement	Mass Unit	MASSUNIT	M↑	2	2	1	1	A
2.8036_3	Biometric Subject Weight Measurement	Measurement Validity	MEASVLD	M↑	3	3	1	1	A
2.8037	Biometric Subject Eye Color		SUBJ_EYE_0	O	n/a	n/a	0	1	n/a
2.8037_0	Biometric Subject Eye Color	Subfields: Repeating sets of information items	SUBJ_EYE	O	n/a	n/a	0	2	n/a
2.8037_1	Biometric Subject Eye Color	Eye Position	EPOS	M↑	1	1	1	1	N
2.8037_2	Biometric Subject Eye Color		ECOL	M↑	3	3	1	1	A
2.8038	Biometric Subject Group Membership		GRPMBR	O	n/a	n/a	0	1	n/a
2.8038_0	Biometric Subject Group Membership	Subfields: Repeating sets of information items	GRPMBR_0	O	n/a	n/a	0	100	n/a
2.8038_1	Biometric Subject Associated Individual	Associated Individual Gender	IASSOC_SEX	O	1	1	0	1	A
2.8038_2	Biometric Subject Associated Individual	Associated Individual Role	IASSOC_ROLE	M↑	1	1	1	1	N
2.8038_3	Biometric Subject Associated Individual	Name - One	NAM1	M↑	1	50	1	1	U
2.8038_4	Biometric Subject Associated Individual	Name - Two	NAM2	M↑	1	50	1	1	U
2.8038_5	Biometric Subject Associated Individual	Name - Three	NAM3	O	1	50	0	1	U
2.8038_6	Biometric Subject Associated Individual	Name - Four	NAM4	O	1	50	0	1	U
2.8038_7	Biometric Subject Associated Individual	Name - Five	NAM5	O	1	50	0	1	U
2.8038_8	Biometric Subject Associated Individual	Address Line 1	ADD1	O	1	50	0	1	U
2.8038_9	Biometric Subject Associated Individual	Address Line 2	ADD2	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8038_10	Biometric Subject Associated Individual	City	CITY	O	1	50	0	1	U
2.8038_11	Biometric Subject Associated Individual	State / Province	STATE	O	1	50	0	1	U
2.8038_12	Biometric Subject Associated Individual	Country Code	CTRY	O	3	3	0	1	A
2.8038_13	Biometric Subject Associated Individual	Postal Code	POSTAL	O	1	50	0	1	ANS
2.8038_14	Biometric Subject Associated Individual	Village	VLG	O	1	50	0	1	U
2.8038_15	Biometric Subject Associated Individual	Phone Number	PHNUM	O	1	50	0	1	ANS
2.8038_16	Biometric Subject Associated Individual	Birth Date	DOB	O	Dependent on Encoding	Dependent on Encoding	0	1	ANS
2.8038_17	Biometric Subject Associated Individual	Occupation	OCP	O	1	50	0	1	U
2.8038_18	Biometric Subject Associated Individual	Comment	COM	O	1	126	0	1	U
2.8039	Biometric Subject Group Membership	Biometric Subject Group Membership Biometric Subject Group Membership	GRPMBR	O	n/a	n/a	0	1	n/a
2.8039_0	Biometric Subject Group Membership	Subfields: Repeating sets of information items	GRPMBR_0	O	n/a	n/a	0	100	n/a
2.8039_1	Biometric Subject Group Membership	Group Name	GMNAM	M↑	1	100	1	1	U
2.8039_2	Biometric Subject Group Membership	Group Type	GMTYP	M↑	3	5	1	1	A
2.8039_3	Biometric Subject Group Membership	Group Member Role	GMRL	O	1	100	0	1	U
2.8039_4	Biometric Subject Group Membership	Address Line 1	ADD1	O	1	50	0	1	U
2.8039_5	Biometric Subject Group Membership	Address Line 2	ADD2	O	1	50	0	1	U
2.8039_6	Biometric Subject Group Membership	City	CITY	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8039_7	Biometric Subject Group Membership	State / Province	STATE	O	1	50	0	1	U
2.8039_8	Biometric Subject Group Membership	Country Code	CTRY	O	3	3	0	1	A
2.8039_9	Biometric Subject Group Membership	Postal Code	POSTAL	O	1	50	0	1	ANS
2.8039_10	Biometric Subject Group Membership	Village	VLG	O	1	50	0	1	U
2.8039_11	Biometric Subject Group Membership	Phone Number	PHNUM	O	1	50	0	1	ANS
2.8039_12	Biometric Subject Group Membership	Comment	COM	O	1	126	0	1	U
2.804	Biometric Subject Name		SUBJ_NAME	O	n/a	n/a	0	1	n/a
2.8040_1	Biometric Subject Name	Name - One	NAM1	O	1	50	0	1	U
2.8040_2	Biometric Subject Name	Name - Two	NAM2	M↑	1	50	1	1	U
2.8040_3	Biometric Subject Name	Name - Three	NAM3	O	1	50	0	1	U
2.8040_4	Biometric Subject Name	Name - Four	NAM4	O	1	50	0	1	U
2.8040_5	Biometric Subject Name	Name - Five	NAM5	O	1	50	0	1	U
2.8040_6	Biometric Subject Name	Name Validity	NAME_VLD	O	3	3	0	1	A
2.8040_7	Biometric Subject Name	Transliteration Code	TRANSLIT_CD	O	4	6	0	1	A
2.8102	Encounter Mission Type		ENCTR_MSN	O	2	5	0	1	A
2.8103	Collection Reason		COL_RSN	O	1	300	0	1	U
2.8106	Triggering Event		EVENT	O	n/a	n/a	0	Unlimited	n/a
2.8106_0	Triggering Event	Subfields: Repeating sets of information items	EVENT_0	O	n/a	n/a	0	*	n/a
2.8106_1	Triggering Event	Triggering Event Identifier	EVENT_ID	O	1	50	0	1	ANS
2.8106_2	Triggering Event	Address Line 1	ADD1	O	1	50	0	1	U
2.8106_3	Triggering Event	Address Line 2	ADD2	O	1	50	0	1	U
2.8106_4	Triggering Event	City	CITY	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8106_6	Triggering Event	Country Code	CTRY	O	3	3	0	1	A
2.8106_7	Triggering Event	Village	VLG	O	1	50	0	1	U
2.8106_8	Triggering Event	Event Description	EVENT_DESC	O	1	255	0	1	U
2.8106_9	Triggering Event	Comment	COM	O	1	126	0	1	U
2.8106_10	Triggering Event	Event Status	EVENT-STATUS	O	1	50	0	1	AN
2.8106_11	Triggering Event	Event Date	EVENT_DATE	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8107	Biometric Subject Privacy Act Indicator		PRI_ACT	O	1	1	0	1	A
2.8108	Employment	Encounter Comment	ENCTR_COM	O	1	1000	0	1	U
2.8109	Repository Candidate List		REPO_CAN	O	n/a	n/a	0	1	n/a
2.8109_0	Repository Candidate List	Subfields: Repeating sets of information items	REPO_CAN_0	O	n/a	n/a	0	*	n/a
2.8109_1	Repository Candidate List	Name of Designated Repository	NDR	O	1	3	0	1	N
2.8109_2	Repository Candidate List	Repository Candidate Identifier Category Code	CAN_ID_CAT_CD	O	3	3	0	1	A
2.8109_3	Repository Candidate List	Repository Candidate Identifier	CAN_ID	O	1	100	0	1	U
2.8109_4	Repository Candidate List	Repository Candidate Name	CAN_NAM	O	1	100	0	1	U
2.811	Iris Image Omitted Reason		IOMITTED	O	1	1	0	1	A
2.8114	Collection Location		COLL_BLO	O	n/a	n/a	0	1	n/a
2.8114_0	Collection Location	Subfields: Repeating sets of information items	COLL_BLO_0	O	n/a	n/a	0	*	n/a
2.8114_01	Collection Location	Universal Time Entry	UTE	O	15	15	0	1	ANS
2.8114_02	Collection Location	Latitude Degree Value	LTD	M↑	1	9	1	1	NS
2.8114_03	Collection Location	Latitude Minute Value	LTM	O	1	8	0	1	NS
2.8114_04	Collection Location	Latitude Second Value	LTS	O	1	8	0	1	N
2.8114_05	Collection Location	Longitude Degree Value	LGD	M↑	1	10	1	1	NS
2.8114_06	Collection Location	Longitude Minute Value	LGM	O	1	8	0	1	NS
2.8114_07	Collection Location	Longitude Second Value	LGS	O	1	8	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8114_08	Collection Location	Elevation	ELE	O	1	8	0	1	NS
2.8114_09	Collection Location	Geodetic Datum Code	GDC	O	3	6	0	1	AN
2.8114_10	Collection Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	M↑	2	3	1	1	AN
2.8114_11	Collection Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	M↑	1	6	1	1	N
2.8114_12	Collection Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	M↑	1	8	1	1	N
2.8114_13	Collection Location	Geographic Reference Text	GRT	O	1	150	0	1	U
2.8114_14	Collection Location	Geographic Coordinate Other System Identifier	OSI	M↑	1	10	1	1	U
2.8114_15	Collection Location	Geographic Coordinate Other System Value	OCV	M↑	1	126	1	1	U
2.8114_16	Collection Location	City	CITY	O	1	50	0	1	U
2.8114_17	Collection Location	State / Province	STATE	O	1	50	0	1	U
2.8114_18	Collection Location	Country Code	CTRY	M↑	3	3	1	1	A
2.8114_19	Collection Location	Village	VLG	O	1	50	0	1	U
2.8114_20	Collection Location	Record Category Code Referenced	REC	O	1	1	0	1	N
2.8115	Operational Personnel		OPER	O	n/a	n/a	0	1	n/a
2.8115_0	Operational Personnel	Subfields: Repeating sets of information items	OPER_0	O	n/a	n/a	0	*	n/a
2.8115_1	Operational Personnel	Operational Personnel Unit/Organization	OPORG	O	1	50	0	1	U
2.8115_2	Operational Personnel	Operational Personnel Role	OPRL	M↑	1	50	1	1	A
2.8115_3	Operational Personnel	Rank Grade Code	RANK	O	1	20	0	1	ANS
2.8115_4	Operational Personnel	US Person Indicator	USIND	O	1	1	0	1	A
2.8115_5	Operational Personnel	Operational Personnel Identifier Type	OPIDCAT CD	M↑	3	7	1	1	A
2.8115_6	Operational Personnel	Operational Personnel Identifier	OPID	M↑	1	50	1	1	U
2.8115_7	Operational Personnel	Name - One	NAM1	M↑	1	50	1	1	U
2.8115_8	Operational Personnel	Name - Two	NAM2	M↑	1	50	1	1	U
2.8115_9	Operational Personnel	Name - Three	NAM3	M↑	1	50	1	1	U
2.8115_10	Operational Personnel	Name - Four	NAM4	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8115_11	Operational Personnel	Name - Five	NAM5	O	1	50	0	1	U
2.8115_12	Operational Personnel	Phone Number	PHNUM	O	1	50	0	1	ANS
2.8115_13	Operational Personnel	Email Address	EMAIL	O	1	254	0	1	ANS
2.8116	Transportation		TRANSPORT	O	1	50	0	1	n/a
2.8116_1	Transportation	Transport Type	TRANSPORT_TYP	O	3	6	0	1	A
2.8116_2	Transportation	Transport Identifier Category Code	TRANSPORT_IDCATCD	O	2	20	0	1	A
2.8116_3	Transportation	Transport Identifier	TRANSPORT_ID	O	1	20	0	1	U
2.8116_4	Transportation	Transport Make	TRANSPORT_MAK	O	1	50	0	1	U
2.8116_5	Transportation	Transport Model	TRANSPORT_MOD	O	1	50	0	1	U
2.8116_6	Transportation	Transport Model Year	TRANSPORT_MODYR	O	4	4	0	1	N
2.8116_7	Transportation	Transport Color	TRANSPORT_COL	O	1	50	0	1	AN
2.8116_8	Transportation	Comment	COM	O	1	126	0	1	U
2.8117	Facial Image Omitted Reason		FOMITTED	O	2	2	0	1	A
2.8118	Collection Equipment Make/Model/Serial Number		COLL_MMS_0	O	n/a	n/a	0	1	n/a
2.8118_0	Collection Equipment Make/Model/Serial Number	Subfields: Repeating sets of information items	COLL_MMS	O	n/a	n/a	0	*	n/a
2.8118_1	Collection Equipment Make/Model/Serial Number	Make	MAK	O	1	50	0	1	U
2.8118_2	Collection Equipment Make/Model/Serial Number	Model	MOD	O	1	50	0	1	U
2.8118_3	Collection Equipment Make/Model/Serial Number	Serial Number	SER	O	1	50	0	1	U
2.8118_4	Collection Equipment Make/Model/Serial Number	Record Category Code Referenced	REC	O	1	1	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8118_5	Collection Equipment Make/Model/Serial Number	Capture Location	CAPT_LOC	O	1	50	0	1	U
2.8118_6	Collection Equipment Make/Model/Serial Number	Capture UTC	CAPT_UTC	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8118_7	Collection Equipment Make/Model/Serial Number	Capture Date	CAPT_DATE	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8118_8	Collection Equipment Make/Model/Serial Number	Device Identification	CAPT_ID	O	1	50	0	1	U
2.8118_9	Collection Equipment Make/Model/Serial Number	Capture Organization	CAPT_ORG	O	1	50	0	1	U
2.8118_10	Collection Equipment Make/Model/Serial Number	Capture Resolution	CAPT_RESOL	O	1	25	0	1	U
2.8118_11	Collection Equipment Make/Model/Serial Number	Capture Vertical Pixel Density Value	CAPT_PIXEL	O	1	25	0	1	N
2.8118_12	Collection Equipment Make/Model/Serial Number	Capture Device Monitoring Mode	CAPT_MONITOR	O	1	25	0	1	U
2.8203	Template Extraction Algorithm		TEA	O	n/a	n/a	0	1	n/a
2.8203_1	Template Extraction Algorithm Name	Template Extraction Algorithm Version	TEA_NAME	M↑	1	100	1	1	AN
2.8203_2	Template Extraction Algorithm	Template Extraction Algorithm Version	TEA_VER	O	1	10	0	1	U
2.8206	Additional Response		ARSP	O	n/a	n/a	0	1	n/a
2.8206_0	Additional Response	Subfields: Repeating sets of information items	ARSP_0	O	n/a	n/a	0	*	n/a
2.8206_1	Additional Response	Name of Designated Repository	NDR	O	1	3	0	1	N
2.8206_2	Additional Response	Additional Response Result Code	RSLTCD	O	1	1	0	1	A
2.8206_3	Additional Response	Additional Response Identifier Category Code	ARIDCATCD	O	3	3	0	1	A
2.8206_4	Additional Response	Additional Response Identifier	ARID	O	1	50	0	1	ANS
2.8206_5	Additional Response	Additional Response Rap Sheet	ERS	O	1	200,000	0	1	U
2.8207	Request Secondary Search		SCND_SRCH	O	n/a	n/a	0	1	n/a
2.8207_1	Request Secondary Search	Name of Designated Repository	NDR	O	1	3	0	1	N
2.8207_2	Request Secondary Search	Request Secondary Search Transaction Type	TOT	O	3	100	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8207_3	Request Secondary Search	Secondary Search Retention Indicator	RET	O	1	1	0	1	A
2.8399	Caveat		CAV	O	n/a	n/a	0	1	n/a
2.8399_0	Caveat	Subfields: Repeating sets of information items	CAV_0	O	n/a	n/a	0	4	n/a
2.8399_1	Caveat	Caveat Originating Agency Country Code	CAV_CNTRY_CD	M↑	3	3	0	1	A
2.8399_2	Caveat	Caveat Originating Agency Name	CAV_ORI_NAME	M↑	1	100	0	1	U
2.8399_3	Caveat	Caveat Originating Agency Identifier	CAV_ORI	M↑	9	9	0	1	AN
2.8399_4	Caveat	Caveat Date	CAV_DT	M↑	Encoding Specific	Encoding Specific	0	1	ANS
2.8399_5	Caveat	Caveat Category Code	CAV_CAT_CD	M↑	1	10	0	1	A
2.8399_6	Caveat	Caveat Text	CAV_TXT	M↑	1	30000	0	1	U
2.8399_7	Caveat	Caveat Releasability	CAV_REL	M↑	1	30000	0	1	ANS
2.8399_8	Caveat	Caveat Originating Country POC Information	CAV_CNT_POC	M↑	1	30000	0	1	ANS
2.8399_9	Caveat	Caveat Adjudicator POC Information	CAV_ADJ_POC	M↑	1	30000	0	1	ANS
2.8399_10	Caveat	Caveat Source Reliability	CAV_SRC	M↑	1	1	0	1	A
2.8399_11	Caveat	Caveat Content Reliability	CAV_CON	M↑	1	1	0	1	A
2.8502	Access Location Badge Color		BADGE_CLR	O	n/a	n/a	0	1	n/a
2.8502_1	Access Location Badge Color	Badge Color Code	BADGE_CLR_CD	O	3	3	0	1	A
2.8502_2	Access Location Badge Color	Badge Clearance Code	BADGE_CLR_AUTH_CD	O	6	6	0	1	AS
2.8505	Screening Document Requirement Indicator		LEP	O	1	1	0	1	A
2.8507	Project Name		PROJ	O	2	30	0	1	U
2.8508	Contract		CONTRACT	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8508_0	Contract	Subfields: Repeating sets of information items	CONTRACT_0	O	n/a	n/a	0	*	n/a
2.8508_1	Contract	Contract Number	CNTRACT_NUM	O	1	58	0	1	U
2.8508_2	Contract	Contract Expiration Date	CNTRACT_EXPDT	O	Encoding Specific	Encoding Specific	0	1	N
2.8509	Access Location Badge		BADGE	O	n/a	n/a	0	1	n/a
2.8509_0	Access Location Badge	Subfields: Repeating sets of information items	BADGE_0	O	n/a	n/a	0	*	n/a
2.8509_1	Access Location Badge	Access Location Badge Number	BADGE_NUM	O	1	100	0	1	U
2.8509_2	Access Location Badge	Access Location Badge Color Code	BADGE_CLR_CD	O	3	3	0	1	A
2.8509_3	Access Location Badge	Access Location Badge Status Code	BADGE_STAT_CD	O	1	1	0	1	A
2.8509_4	Access Location Badge	Access Location Badge Issue Date	BADGE_ISSDT	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8509_5	Access Location Badge	Access Location Badge Expiration Date	BADGE_EXPDT	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8509_6	Access Location Badge	Access Location Badge Issuance Organization Name	BADGE_ISSORG	O	1	100	0	1	U
2.851	Access Location		ACC_LOC_APT_PERM	O	n/a	n/a	0	1	n/a
2.8510_0	Access Location	Subfields: Repeating sets of information items	ACC_LOC_APT_PERM_0	O	n/a	n/a	0	*	n/a
2.8510_1	Access Location	Access Location Airport Installation Category Code	ACC_LOC_APT_PERM_APT_LOC_TYP	O	3	7	0	1	AN
2.8510_2	Access Location	Force Protection Condition Code	ACC_LOC_APT_PERM_FP_CD	O	11	13	0	1	AS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8510_3	Access Location	Authority Approval Status Code	ACC_LOC_APT_PERM_AUTH_CD	O	6	6	0	1	AS
2.8511	Access Location Required Month		ACC_LOC_MONTH	O	n/a	n/a	0	1	n/a
2.8511_0	Access Location Required Month	Subfields: Repeating sets of information items	ACC_LOC_MONTH_0	O	n/a	n/a	0	*	n/a
2.8511_1	Access Location Required Month	Month Number	ACC_LOC_MONTH_VAL	O	2	2	0	1	N
2.8511_2	Access Location Required Month	Authority Approval Status Code	ACC_LOC_MONTH_AUTH_CD	O	6	6	0	1	AS
2.8512	Access Location Required Day of the Week		ACC_LOC_WKDAY	O	n/a	n/a	0	1	n/a
2.8512_1	Access Location Required Day of the Week	Weekday Number	ACC_LOC_WKDAY_NUM	O	1	1	0	1	N
2.8512_2	Access Location Required Day of the Week	Authority Approval Status Code	ACC_LOC_WKDAY_AUTH_CD	O	6	6	0	1	AS
2.8513	Access Location Badge Replacement		BADGE_RPL	O	n/a	n/a	0	1	n/a
2.8513_1	Access Location Badge Replacement	Access Location Badge Replacement Reason Code	BADGE_RPL_REASON_CD	O	1	1	0	1	A
2.8513_2	Access Location Badge Replacement	Access Location Replaced Badge Number	BADGE_RPL_BADGE_NUM	O	1	100	0	1	U
2.8514	Access Location Privilege		ACC_LOC_PRV	O	n/a	n/a	0	1	n/a
2.8514_0	Access Location Privilege	Subfields: Repeating sets of information items	ACC_LOC_PRV_0	O	n/a	n/a	0	*	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8514_1	Access Location Privilege	Access Location Privilege Category Code	ACC_LOC_PRV_TYP	O	1	20	0	1	A
2.8514_2	Access Location Privilege	Access Location Privilege Value	ACC_LOC_PRV_VAL	O	1	50	0	1	U
2.8515	Access Location		ACC_LOC	O	n/a	n/a	0	1	n/a
2.8515_0	Access Location	Subfields: Repeating sets of information items	ACC_LOC_0	O	n/a	n/a	0	*	n/a
2.8515_1	Access Location	Location Name	ACC_LOC	O	1	250	0	1	U
2.8515_2	Access Location	Country Code	ACC_LOC_CNTRY_CD	O	3	3	0	1	A
2.8515_3	Access Location	State / Province	ACC_LOC_STATE	O	1	50	0	1	U
2.8515_4	Access Location	City	ACC_LOC_CITY	O	1	50	0	1	U
2.8515_5	Access Location	Village	ACC_LOC_VLG	O	1	50	0	1	U
2.8515_6	Access Location	Latitude Degree	ACC_LOC_GEO_CORD_LAT_DEG	M↑	1	9	1	1	NS
2.8515_7	Access Location	Latitude Minute	ACC_LOC_GEO_CORD_LAT_MIN	O	1	8	0	1	NS
2.8515_8	Access Location	Latitude Second	ACC_LOC_GEO_CORD_LAT_SEC	O	1	8	0	1	NS
2.8515_9	Access Location	Longitude Degree	ACC_LOC_GEO_CORD_LONG_DEG	M↑	1	10	1	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8515_10	Access Location	Longitude Minute	ACC_LOC_GEO_CORD_LONG_MIN	O	1	8	0	1	NS
2.8515_11	Access Location	Longitude Second	ACC_LOC_GEO_CORD_LONG_SEC	O	1	8	0	1	NS
2.8515_12	Access Location	Location Description	ACC_LOC_DESC	O	1	255	0	1	U
2.8516	Access Location Expiration		ACC_LOC_EXP	O	n/a	n/a	0	1	n/a
2.8516_0	Access Location Expiration	Subfields: Repeating sets of information items	ACC_LOC_EXP_0	O	n/a	n/a	0	*	n/a
2.8516_1	Access Location Expiration	Access Location Expiration Date	ACC_LOC_EXPDT	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8516_2	Access Location Expiration	Authority Approval Status Code	ACC_LOC_EXP_AUTH_CD	O	6	6	0	1	AS
2.8517	Access Location Facility Permission		ACC_LOC_PAC_PERM	O	n/a	n/a	0	1	n/a
2.8517_0	Access Location Facility Permission	Subfields: Repeating sets of information items	ACC_LOC_PAC_PERM_0	O	n/a	n/a	0	*	n/a
2.8517_1	Access Location Facility Permission	Access Location Facility Category Code	ACC_LOC_PAC_PERM_FAC_TYP	O	1	20	0	1	A
2.8517_2	Access Location Facility Permission	Force Protection Condition Code	ACC_LOC_PAC_PERM_FP_CD	O	11	13	0	1	AS
2.8517_3	Access Location Facility Permission	Authority Approval Status Code	ACC_LOC_PAC_PERM_AUTH_CD	O	6	6	0	1	AS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8518	Access Application Number		ACC_APP_NUM	O	16	16	0	1	AN
2.8548	Biometric Subject Specialty		SUBJ_SPEC	O	n/a	n/a	0	1	n/a
2.8548_0	Biometric Subject Specialty	Subfields: Repeating sets of information items	SUBJ_SPEC_0	O	n/a	n/a	0	*	n/a
2.8548_1	Biometric Subject Specialty	Biometric Subject Specialty Value	SUBJ_SPEC_VAL	O	1	100	0	1	U
2.8548_2	Biometric Subject Specialty	Biometric Subject Specialty Proficiency	SUBJ_SPEC_PRO	O	1	1	0	1	N
2.8548_3	Biometric Subject Specialty	Biometric Subject Specialty Validity	SUBJ_SPEC_VALID	O	3	3	0	1	A
2.8549	Response Maximum Count		RESP_CNT	M	1	Unlimited	0	1	N
2.8600	Reference System Identifier		ENTITY_ID_0	M	n/a	n/a	1	*	U
2.8600_0	Reference System Identifier	Subfields: Repeating sets of information items	ENTITY_ID	O	n/a	n/a	0	*	n/a
2.8600_1	Reference System Identifier	Identifier	ENTITY_NO	O	1	50	0	1	U
2.8600_2	Reference System Identifier	Jurisdiction	ENITITY_JURIS	O	1	50	0	1	U
2.8600_3	Reference System Identifier	Category	ENTITY_CATEGORY	O	1	50	0	1	U
2.8600_4	Reference System Identifier	Description	ENITITY_DESC	O	1	50	0	1	U
2.8600_5	Reference System Identifier	Effective Date	ENTITY_EFF	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8600_6	Reference System Identifier	Expiration Date	ENITITY_EXP	O	Encoding Specific	Encoding Specific	0	1	ANS
2.8600_7	Reference System Identifier	Source	ENTITY_SOURCE	O	1	50	0	1	U
2.8600_8	Reference System Identifier	Status	ENTITY_STATUS	O	1	50	0	1	U
2.8600_9	Reference System Identifier	Augmentation Point	ENTITY_AUGMENTATION	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8601	Response Maximum Count		RESP_CNT	O	1	50	0	1	N
2.8602	Enhanced Status Message		EMSU	M	n/a	n/a	0	1	U
2.8602_0	Enhanced Status Message	Subfields: Repeating sets of information items	EMSU_0	O	n/a	n/a	0	*	n/a
2.8602_1	Enhanced Status Message	Comment	EMSU_1	O	1	255	0	1	U
2.8602_2	Enhanced Status Message	Date	EMSU_2	O	Encoding Specific	Encoding Specific	0	1	U
2.8602_3	Enhanced Status Message	Designator	EMSU_3	O	1	255	0	1	U
2.8602_4	Enhanced Status Message	Description	EMSU_4	O	1	255	0	1	U
2.8602_5	Enhanced Status Message	Issuer Identification	EMSU_5	O	1	50	0	1	U
2.8602_6	Enhanced Status Message	Issuer	EMSU_6	O	1	50	0	1	U
2.8602_7	Enhanced Status Message	Augmentation Point	EMSU_7	O	1	50	0	1	U
2.8603	Primary Language		PRIM_LANG	O	n/a	n/a	0	1	U
2.8603_1	Primary Language	Primary Language Code	PRIM_LANG_1	O	3	3	0	1	U
2.8603_2	Primary Language	Primary Language Description	PRIM_LANG_2	O	1	50	0	1	U
2.8603_3	Primary Language	Primary Language Dialect	PRIM_LANG_3	O	1	50	0	1	U
2.8603_4	Primary Language	Primary Language Subject Reads	PRIM_LANG_4	O	1	1	0	1	N
2.8603_5	Primary Language	Primary Language Subject Speaks	PRIM_LANG_5	O	1	1	0	1	N
2.8603_6	Primary Language	Primary Language Subject Writes	PRIM_LANG_6	O	1	1	0	1	N
2.8604	Secondary Language		SECOND_LANG_0	O	n/a	n/a	0	1	U
2.8604_0	Secondary Language	Subfields: Repeating sets of information items	SECOND_LANG	O	n/a	n/a	0	*	n/a
2.8604_1	Secondary Language	Secondary Language Code	SECOND_LANG_1	O	3	3	0	1	U
2.8604_2	Secondary Language	Secondary Language Description	SECOND_LANG_2	O	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
2.8604_3	Secondary Language	Secondary Language Dialect	SECOND_LANG_3	O	1	50	0	*	U
2.8604_4	Secondary Language	Secondary Language Subject Reads	SECOND_LANG_4	O	1	1	0	1	N
2.8604_5	Secondary Language	Secondary Language Subject Speaks	SECOND_LANG_5	O	1	1	0	1	N
2.8604_6	Secondary Language	Secondary Language Subject Writes	SECOND_LANG_6	O	1	1	0	1	N
2.8605	Speaker Identification Engine Response		ENG_RESP	O	n/a	n/a	0	1	U
2.8605_1	Speaker Identification Engine Response	Voice Engine Software Version	ENG_RESP_1	O	1	50	0	1	U
2.8605_2	Speaker Identification Engine Response	Voice Engine Software Name	ENG_RESP_2	O	1	50	0	1	U
2.8605_3	Speaker Identification Engine Response	Voice Engine Vendor	ENG_RESP_3	O	1	50	0	1	U
2.8605_4	Speaker Identification Engine Response	Detected Speaker Number	ENG_RESP_4	O	1	50	0	1	U
2.8605_5	Speaker Identification Engine Response	Voice Engine Rank	ENG_RESP_5	O	1	50	0	1	N
2.8605_6	Speaker Identification Engine Response	Match Level	ENG_RESP_6	O	1	50	0	1	U
9.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
9.002	Information Designation Character		IDC	M	1	2	1	1	N
9.003	Impression Type		IMP	M	1	2	1	1	N
9.004	Minutia Format		FMT	M	1	1	1	1	A
9.013	AFIS Feature Vector		AFV	O	2048	2048	0	1	B
9.014	Finger Number		FGN	M	2	2	1	1	N
9.015	Number of Minutiae		NMN	M	2	3	1	1	N
9.016	Fingerprint Characterization Process		FCP	C	n/a	n/a	1	1	n/a
9.016_1	Fingerprint Characterization Process	Fingerprint Characterization Equipment	VEN	M↑	3	12	1	1	A
9.016_2	Fingerprint Characterization Process	Fingerprint Characterization Version Identifier	VID	M↑	2	2	1	1	AN
9.016_3	Fingerprint Characterization Process	Fingerprint Characterization Method	MET	M↑	3	3	1	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.017	AFIS/FBI Pattern Classification		APC	O	n/a	n/a	1	1	n/a
9.017_1	AFIS/FBI Pattern Classification	Pattern Classification Code	APAT	M↑	2	2	1	1	A
9.017_2	AFIS/FBI Pattern Classification	First Subpattern Ridge Count	RCN1	C	1	2	0	1	N
9.017_3	AFIS/FBI Pattern Classification	Second Subpattern Ridge Count	RCN2	C	1	2	0	1	N
9.018	Region of Value Polygon		ROV	O	n/a	n/a	0	1	n/a
9.018_1	Region of Value Polygon	Vertex	XYM	M↑	8	8	1	1	N
9.019	Coordinate Offsets		COF	O	8	8	0	1	n/a
9.019_1	Coordinate Offsets	Offset to Upper Left Corner Subimage	XYP	M↑	8	8	1	1	N
9.019_2	Coordinate Offsets	Center of Rotation in Subimage	XYP	C	8	8	1	1	N
9.019_3	Coordinate Offsets	Rotation Angle Clock Wise Degrees	THET	C	8	8	0	1	N
9.019_4	Coordinate Offsets	Rotation Center in Rotated Subimage	XYP	C	8	8	1	1	N
9.019_5	Coordinate Offsets	Offset to Upper Left Corner Final Subimage	XYP	C	8	8	1	1	N
9.02	Orientation Uncertainty		ORN	M	1	3	1	1	N
9.021	Core Attributes		CRA	O	n/a	n/a	0	2	n/a
9.021_1	Core Attributes	Core Location	XYM	C	8	8	1	1	N
9.021_2	Core Attributes	Core Direction in Degrees	DID	C	3	3	1	1	N
9.021_3	Core Attributes	Core Position Uncertainty	PUM	C	4	4	1	1	N
9.022	Delta Attributes		DLA	O	n/a	n/a	0	2	n/a
9.022_1	Delta Attributes	Delta Location	XYM	C	8	8	1	1	N
9.022_2	Delta Attributes	Upward Flow Direction	DIDU	C	3	3	1	1	N
9.022_3	Delta Attributes	Leftward Flow Direction	DIDL	C	3	3	1	1	N
9.022_4	Delta Attributes	Rightward Flow Direction	DIDR	C	3	3	1	1	N
9.022_5	Delta Attributes	Delta Position Uncertainty	PUM	C	4	4	1	1	N
9.023	Minutiae and Ridge Count Data		MAT	M	n/a	n/a	1	254	n/a
9.023_1	Minutiae and Ridge Count Data	Minutiae Index Number	MDX	M	3	3	1	1	N
9.023_2	Minutiae and Ridge Count Data	Location Direction	XYT	M	11	11	1	1	N
9.023_3	Minutiae and Ridge Count Data	Quality Measure	QMS	O	2	2	1	1	N
9.023_4	Minutiae and Ridge Count Data	Minutiae Type Designation	MNT	O	1	1	0	*	AN
9.023_5	Minutiae and Ridge Count Data	Ridge Count Data Octant 0	MRO	C	5	5	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.023_6	Minutiae and Ridge Count Data	Ridge Count Data Octant 1	MRO1	C	5	5	1	1	N
9.023_7	Minutiae and Ridge Count Data	Ridge Count Data Octant 2	MRO2	C	5	5	1	1	N
9.023_8	Minutiae and Ridge Count Data	Ridge Count Data Octant 3	MRO3	C	5	5	1	1	N
9.023_9	Minutiae and Ridge Count Data	Ridge Count Data Octant 4	MRO4	C	5	5	1	1	N
9.023_10	Minutiae and Ridge Count Data	Ridge Count Data Octant 5	MRO5	C	5	5	1	1	N
9.023_11	Minutiae and Ridge Count Data	Ridge Count Data Octant 6	MRO6	C	5	5	1	1	N
9.023_12	Minutiae and Ridge Count Data	Ridge Count Data Octant 7	MRO7	C	5	5	1	1	N
9.023_13	Minutiae and Ridge Count Data	Octant Residuals	RSO	O	8	8	0	*	N
9.024	Characterization Quality		CHQ	O	1	3	0	*	N
9.025	Classifier Quality		CLQ	O	6	7	0	*	N
9.126	M1 CBEFF Information		CBI	M	n/a	n/a	0	1	n/a
9.126_1	M1 CBEFF Information	CBEFF Format Owner	CFO	M↑	2	2	1	1	N
9.126_2	M1 CBEFF Information	CBEFF Format Type	CFT	M↑	3	3	1	1	N
9.126_3	M1 CBEFF Information	CBEFF Product Identifier	CPI	M↑	8	8	1	1	H
9.127	M1 Capture Equipment Identification		CEI	M	n/a	n/a	1	1	n/a
9.127_1	M1 Capture Equipment Identification	Appendix F Status	AFS	M↑	4	4	1	1	A
9.127_2	M1 Capture Equipment Identification	Capture Equipment Identifier	CID	M↑	1	30	1	1	U
9.128	M1 Horizontal Line Length		HLL	M	2	5	1	1	N
9.129	M1 Vertical Line Length		VLL	M	2	5	1	1	N
9.13	Scale Units		SLC	M	1	1	1	1	N
9.131	Transmitted Horizontal Pixel Scale		THPS	M	1	5	1	1	N
9.132	Transmitted Vertical Pixel Scale		TVPS	M	1	5	1	1	N
9.133	M1 Finger View		FVW	M	1	2	1	1	N
9.134	M1 Friction Ridge Generalized Position		FGP	M	1	2	1	1	N
9.135	M1 Friction Ridge Quality Data		FQD	M	n/a	n/a	0	1	n/a
9.135_0	M1 Friction Ridge Quality Data	Subfields: Repeating sets of information items	FQD_0	M	n/a	n/a	1	1	n/a
9.135_1	M1 Friction Ridge Quality Data	Quality Value	QVU	M↑	1	3	0	1	N
9.135_2	M1 Friction Ridge Quality Data	Algorithm Vendor Identification	QAV	O	4	4	0	1	H
9.135_3	M1 Friction Ridge Quality Data	Algorithm Product Identification	QAP	O	1	5	1	1	N
9.136	M1 Number of Minutiae		NOM	M	1	4	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.137	M1 Finger Minutiae Data		FMD	M	n/a	n/a	1	9999	n/a
9.137_1	M1 Finger Minutiae Data	Minutia Index Number [M1-378]	MAN	M	1	4	1	1	N
9.137_2	M1 Finger Minutiae Data	X Coordinate [M1-378]	MXC	M	1	5	1	1	N
9.137_3	M1 Finger Minutiae Data	Y Coordinate [M1-378]	MYC	M	1	5	1	1	N
9.137_4	M1 Finger Minutiae Data	Minutiae Angle [M1-378]	MAV	M	1	3	1	1	N
9.137_5	M1 Finger Minutiae Data	Minutiae Type [M1-378]	M1M	M	1	1	1	1	N
9.137_6	M1 Finger Minutiae Data	Quality of Minutia [M1-378]	QOM	M	1	3	1	1	N
9.138	M1 Ridge Count Information		RCI	D	n/a	n/a	0	0	1
9.138_0	M1 Ridge Count Information	Subfields: Repeating sets of information items	RCI_0	M↑	n/a	n/a	0	79993	n/a
9.138_1a	M1 Ridge Count Information	Ridge Count Extraction Method	REM	M↑	1	1	1	1	N
9.138_1b	M1 Ridge Count Information	Center Minutia Index Number	CMI	M↑	1	4	1	1	N
9.138_2a	M1 Ridge Count Information	Filler 1	FI1	M↑	1	1	1	1	
9.138_2b	M1 Ridge Count Information	Neighboring Minutia Index Number	NMN	M↑	1	4	1	1	N
9.138_3a	M1 Ridge Count Information	Filler 2	FI2	M↑	1	1	1	1	
9.138_3b	M1 Ridge Count Information	Number of Ridges Crossed	NRC	M↑	1	2	1	1	N
9.139	M1 Core Information		CIN	D	n/a	n/a	0	1	n/a
9.139_0	M1 Core Information	Subfields: Repeating sets of information items	CIN_0	M↑	n/a	n/a	0	10	n/a
9.139_1	M1 Core Information	X Coordinate [M1 Core]	XCC	M↑	1	5	1	1	N
9.139_2	M1 Core Information	Y Coordinate [M1 Core]	YCC	M↑	1	5	1	1	N
9.139_3	M1 Core Information	Angle of the Core	ANGC	M↑	1	3	1	1	N
9.14	M1 Delta Information		DIN	D	n/a	n/a	0	1	n/a
9.140_0	M1 Delta Information	Subfields: Repeating sets of information items	DIN_0	M↑	n/a	n/a	0	10	n/a
9.140_1	M1 Delta Information	X Coordinate [M1 Delta]	XCD	M↑	1	5	1	1	N
9.140_2	M1 Delta Information	Y Coordinate [M1 Delta]	YCD	M↑	1	5	1	1	N
9.140_3	M1 Delta Information	First Angle of the Delta	ANG1	M↑	1	5	1	3	N
9.141	M1 Additional Delta Angles		ADA	D	n/a	n/a	0	1	n/a
9.141_0	M1 Additional Delta Angles	Subfields: Repeating sets of information items	ADA_0	M↑	n/a	n/a	0	10	n/a
9.141_1	M1 Additional Delta Angles	Second Angle of the Delta	ANG2	M↑	1	3	1	3	N
9.141_2	M1 Additional Delta Angles	Third Angle of the Delta	ANG3	M↑	1	3	1	3	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.3	Region of Interest		ROI	M	n/a	n/a	1	1	n/a
9.300_1	Region of Interest	ROI Width	EWI	M↑	1	5	1	1	N
9.300_2	Region of Interest	ROI Height	EHI	M↑	1	5	1	1	N
9.300_3	Region of Interest	ROI Horizontal Offset	EHO	O	1	5	0	1	N
9.300_4	Region of Interest	ROI Vertical Offset	EVO	O	1	5	0	1	N
9.300_5	Region of Interest	ROI Polygon	ROP	O	1186	1188	3	99	NS
9.301	EFS Orientation		ORT	O	n/a	n/a	0	1	n/a
9.301_1	EFS Orientation	EFS Orientation Direction	EOD	M↑	1	4	1	1	NS
9.301_2	EFS Orientation	EFS Orientation Uncertainty	EUC	O↑	1	3	0	1	N
9.302	EFS Finger, Palm, Plantar Position		FPP	M	n/a	n/a	0	1	n/a
9.302_0	EFS Finger, Palm, Plantar Position	Subfields: Repeating sets of information items	FPP_0	M	n/a	n/a	1	20	n/a
9.302_1	EFS Finger, Palm, Plantar Position	Friction Ridge Generalized Position	FGP	M↑	1	2	1	1	N
9.302_2	EFS Finger, Palm, Plantar Position	Finger Segment	FSM	O	3	3	0	1	A
9.302_3	EFS Finger, Palm, Plantar Position	Off-Center Fingerprint	OCF	O	1	1	0	1	A
9.302_4	EFS Finger, Palm, Plantar Position	Segment Polygon	SGP	O	1186	1188	3	99	NS
9.303	EFS Finger Set Profile		FSP	O	n/a	n/a	0	1	N
9.303_0	EFS Finger Set Profile		FSP_0	M↑	1	2	0	10	N
9.307	EFS Pattern Classification		PAT	D	n/a	n/a	0	1	n/a
9.307_0	EFS Pattern Classification	Subfields: Repeating sets of information items	PAT_0	M↑	n/a	n/a	0	8	n/a
9.307_1	EFS Pattern Classification	General Class	GCF	M↑	2	2	1	1	A
9.307_2	EFS Pattern Classification	Subclass	SUB	D	2	2	0	1	A
9.307_3	EFS Pattern Classification	Whorl-Delta Relationship	WDR	D	1	1	0	1	A
9.308	EFS Ridge Quality Map		RQM	O	n/a	n/a	0	1	n/a
9.308_0	EFS Ridge Quality Map	Subfields: Repeating sets of information items	RQM_0	M↑	1	50000	0	Round Up (EHI ÷ GSZ)	H
9.309	Ridge Quality Map Format		RQF	D	n/a	n/a	0	1	n/a
9.309_1	Ridge Quality Map Format	Grid Size	GSZ	M↑	1	2	1	1	N
9.309_2	Ridge Quality Map Format	Ridge Quality Data Format	RDF	M↑	3	3	1	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.31	EFS Ridge Flow Map		RFM	O	n/a	n/a	0	1	Base 64
9.310_0	EFS Ridge Flow Map	Subfields: Repeating sets of information items	RFM_0	M↑	1	100000	1	*	Base 65
9.311	EFS Ridge Flow Map Format		RFF	O	n/a	n/a	0	1	n/a
9.311_1	EFS Ridge Flow Map Format	Sampling Frequency	SFQ	M↑	1	2	1	1	N
9.311_2	EFS Ridge Flow Map Format	Ridge Flow Data Format	RDF	M↑	3	3	1	1	AN
9.312	EFS Ridge Wavelength Map		RWM	O	n/a	n/a	0	1	n/a
9.312_0	EFS Ridge Wavelength Map	Subfields: Repeating sets of information items	RWM_0	M↑	1	100000	0	1	AN
9.313	EFS Ridge Wavelength Map Format		RWF	O	n/a	n/a	0	1	n/a
9.313_1	EFS Ridge Wavelength Map Format	Sampling Frequency	FWS	M↑	1	2	1	1	N
9.313_2	EFS Ridge Wavelength Map Format	Data Format	FDF	M↑	3	3	1	1	A
9.314	EFS Tonal Reversal		TRV	O	1	1	0	1	A
9.315	EFS Possible Lateral Reversal		PLR	O	1	1	0	1	A
9.316	EFS Friction Ridge Quality Metric		FQM	O	n/a	n/a	0	1	n/a
9.316_0	EFS Friction Ridge Quality Metric	Subfields: Repeating sets of information items	FQM_0	M↑	n/a	n/a	0	10	n/a
9.316_1	EFS Friction Ridge Quality Metric	Quality Value	QVU	M↑	1	3	1	1	N
9.316_2	EFS Friction Ridge Quality Metric	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
9.316_3	EFS Friction Ridge Quality Metric	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
9.317	EFS Possible Growth or Shrinkage		PGS	O	n/a	n/a	0	1	n/a
9.317_1	EFS Possible Growth or Shrinkage	Growth or Shrinkage Type	TGS	M↑	1	1	1	1	A
9.317_2	EFS Possible Growth or Shrinkage	Growth or Shrinkage Comment	CGS	O↑	1	1000	0	1	U
9.32	EFS Cores		COR	D	n/a	n/a	0	1	n/a
9.320_0	EFS Cores	Subfields: Repeating sets of information items	COR_0	M↑	n/a	n/a	0	*	n/a
9.320_1	EFS Cores	X Coordinate	CXC	M↑	1	5	1	1	N
9.320_2	EFS Cores	Y Coordinate	CYC	M↑	1	5	1	1	N
9.320_3	EFS Cores	Direction	CDI	O↑	1	3	0	1	N
9.320_4	EFS Cores	Radius of Position Uncertainty	RPU	O↑	1	3	0	1	N
9.320_5	EFS Cores	Direction Uncertaintity	DUY	O↑	1	3	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.321	EFS Deltas		DEL	D	n/a	n/a	0	1	n/a
9.321_0	EFS Deltas	Subfields: Repeating sets of information items	DEL_0	M↑	n/a	n/a	0	*	n/a
9.321_1	EFS Deltas	X Coordinate	DXC	M↑	1	5	1	1	N
9.321_2	EFS Deltas	Y Coordinate	DYC	M↑	1	5	1	1	N
9.321_3	EFS Deltas	Direction Up	DUP	O↑	1	3	0	1	N
9.321_4	EFS Deltas	Direction Left	DLF	O↑	1	3	0	1	N
9.321_5	EFS Deltas	Direction Right	DRT	O↑	1	3	0	1	N
9.321_6	EFS Deltas	Type	DTP	O↑	1	3	0	1	AN
9.321_7	EFS Deltas	Radius of Position Uncertainty	RPU	O↑	1	3	0	1	N
9.321_8	EFS Deltas	Direction Uncertaintity Up	DUU	O↑	1	3	0	1	N
9.321_9	EFS Deltas	Direction Uncertainty Left	DUL	O↑	1	3	0	1	N
9.321_10	EFS Deltas	Direction Uncertainty Right	DUR	O↑	1	3	0	1	N
9.322	EFS Core-Delta Ridge Counts		CDR	O	n/a	n/a	0	1	n/a
9.322_0	EFS Core-Delta Ridge Counts	Subfields: Repeating sets of information items	CDR_0	M↑	n/a	n/a	0	*	n/a
9.322_1	EFS Core-Delta Ridge Counts	Core Index	CIX	M↑	1	2	1	1	AN
9.322_2	EFS Core-Delta Ridge Counts	Delta Index	DIX	M↑	1	2	1	1	AN
9.322_3	EFS Core-Delta Ridge Counts	Min Ridge Count	MNRC	M↑	1	2	1	1	N
9.322_4	EFS Core-Delta Ridge Counts	Max Ridge Count	MXRC	O↑	1	2	0	1	N
9.323	EFS Center Point of Reference		CPR	O	n/a	n/a	0	1	n/a
9.323_0	EFS Center Point of Reference	Subfields: Repeating sets of information items	CPR_0	M↑	n/a	n/a	0	4	n/a
9.323_1	EFS Center Point of Reference	Method	CPM	M↑	1	1	1	1	AN
9.323_2	EFS Center Point of Reference	X Coordinate	PXC	M↑	1	5	1	1	NS
9.323_3	EFS Center Point of Reference	Y Coordinate	PYC	M↑	1	5	1	1	NS
9.323_4	EFS Center Point of Reference	Radius of Position Uncertainty	CRU	O↑	1	3	0	1	N
9.324	EFS Distinctive Features		DIS	D	n/a	n/a	0	1	n/a
9.324_0	EFS Distinctive Features	Subfields: Repeating sets of information items	DIS_0	M↑	n/a	n/a	0	100	n/a
9.324_1	EFS Distinctive Features	Distinctive Feature Type	DIT	M↑	4	9	1	1	A
9.324_2	EFS Distinctive Features	Distinctive Features Polygon	DFP	O↑	11	1188	3	99	NS
9.324_3	EFS Distinctive Features	Distinctive Features Comment	DFC	O↑	1	1000	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.325	EFS No Cores Present		NCOR	D	1	1	0	1	A
9.326	EFS No Deltas Present		NDEL	D	1	1	0	1	A
9.327	EFS No Distinctive Features Present		NDIS	D	1	1	0	1	A
9.331	EFS Minutiae		MIN	D	n/a	n/a	0	1	n/a
9.331_0	EFS Minutiae	Subfields: Repeating sets of information items	MIN_0	M↑	n/a	n/a	0	1000	n/a
9.331_1	EFS Minutiae	X Coordinate	MXC	M↑	1	5	1	1	N
9.331_2	EFS Minutiae	Y Coordinate	MYC	M↑	1	5	1	1	N
9.331_3	EFS Minutiae	Theta Degrees	MTD	M↑	1	3	1	1	N
9.331_4	EFS Minutiae	Minutiae Type	MTY	M↑	1	1	1	1	A
9.331_5	EFS Minutiae	Radius of Posiiton Uncertainty	MRU	O↑	1	3	0	1	N
9.331_6	EFS Minutiae	Minutia Direction of Uncertainty	MDU	O↑	1	3	0	1	N
9.332	EFS Minutiae Ridge Count Algorithm		MRA	D	5	8	0	1	AN
9.333	EFS Minutiae Ridge Counts		MRC	D	n/a	n/a	0	1	n/a
9.333_0	EFS Minutiae Ridge Counts	Subfields: Repeating sets of information items	MRC_0	M↑	n/a	n/a	0	*	n/a
9.333_1	EFS Minutiae Ridge Counts	Minutiae Index A	MIA	M↑	1	4	1	1	N
9.333_2	EFS Minutiae Ridge Counts	Minutiae Index B	MIB	M↑	1	4	1	1	N
9.333_3	EFS Minutiae Ridge Counts	Ridge Count	MIR	M↑	1	2	1	1	N
9.333_4	EFS Minutiae Ridge Counts	Reference Number	MRN	O↑	1	1	0	1	N
9.333_5	EFS Minutiae Ridge Counts	Residual	MRS	O↑	1	1	0	1	N
9.334	EFS No Minutiae Present		NMIN	D	1	1	0	1	A
9.335	EFS Ridge Count Confidence		RCC	D	n/a	n/a	0	1	n/a
9.335_0	EFS Ridge Count Confidence	Subfields: Repeating sets of information items	RCC_0	M↑	n/a	n/a	0	7993	n/a
9.335_1	EFS Ridge Count Confidence	X Coordinate Point A	ACX	M↑	1	5	1	1	N
9.335_2	EFS Ridge Count Confidence	Y Coordinate Point A	ACY	M↑	1	5	1	1	N
9.335_3	EFS Ridge Count Confidence	X Coordinate Point B	BCX	M↑	1	5	1	1	N
9.335_4	EFS Ridge Count Confidence	Y Coordinate Point B	BCY	M↑	1	5	1	1	N
9.335_5	EFS Ridge Count Confidence	Method of Ridge Counting	MORC	M↑	1	1	1	1	A
9.335_6	EFS Ridge Count Confidence	Confidence Value	MCV	M↑	1	2	1	1	N
9.34	EFS Dots		DOT	D	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.340_0	EFS Dots	Subfields: Repeating sets of information items	DOT_0	M↑	n/a	n/a	0	1000	n/a
9.340_1	EFS Dots	Dot X Coordinate	DOX	M↑	1	5	1	1	N
9.340_2	EFS Dots	Dot Y Coordinate	DOY	M↑	1	5	1	1	N
9.340_3	EFS Dots	Dot Length	DOL	O↑	1	2	0	1	N
9.341	EFS Incipient Ridges		INR	D	n/a	n/a	0	1	n/a
9.341_0	EFS Incipient Ridges	Subfields: Repeating sets of information items	INR_0	M↑	n/a	n/a	0	1000	n/a
9.341_1	EFS Incipient Ridges	X Coordinate Point 1	X1C	M↑	1	5	1	1	N
9.341_2	EFS Incipient Ridges	Y Coordinate Point 1	Y1C	M↑	1	5	1	1	N
9.341_3	EFS Incipient Ridges	X Coordinate Point 2	X2C	M↑	1	5	1	1	N
9.341_4	EFS Incipient Ridges	Y Coordinate Point 2	Y2C	M↑	1	5	1	1	N
9.342	EFS Creases and Linear Discontinuities		CLD	D	n/a	n/a	0	1	n/a
9.342_0	EFS Creases and Linear Discontinuities	Subfields: Repeating sets of information items	CLD_0	M↑	n/a	n/a	0	1000	n/a
9.342_1	EFS Creases and Linear Discontinuities	X Coordinate Point 1	X1D	M↑	1	5	1	1	N
9.342_2	EFS Creases and Linear Discontinuities	Y Coordinate Point 1	Y1D	M↑	1	5	1	1	N
9.342_3	EFS Creases and Linear Discontinuities	X Coordinate Point 2	X2D	M↑	1	5	1	1	N
9.342_4	EFS Creases and Linear Discontinuities	Y Coordinate Point 2	Y2D	M↑	1	5	1	1	N
9.342_5	EFS Creases and Linear Discontinuities	Type	TPD	M↑	2	5	1	1	AN
9.343	EFS Ridge Edge Features		REF	D	n/a	n/a	0	1	n/a
9.343_0	EFS Ridge Edge Features	Subfields: Repeating sets of information items	REF_0	M↑	n/a	n/a	0	1000	n/a
9.343_1	EFS Ridge Edge Features	X Coordinate	CLX	M↑	1	5	1	1	N
9.343_2	EFS Ridge Edge Features	Y Coordinate	CLY	M↑	1	5	1	1	N
9.343_3	EFS Ridge Edge Features	Type	CLT	M↑	1	1	0	1	A
9.344	EFS No Pores Present		NPOR	D	1	1	0	1	A
9.345	EFS Pores		POR	O	n/a	n/a	0	1	n/a
9.345_0	EFS Pores	Subfields: Repeating sets of information items	POR_0	M↑	n/a	n/a	0	1000	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.345_1	EFS Pores	X Coordinate	POX	M↑	1	5	1	1	N
9.345_2	EFS Pores	Y Coordinate	POY	M↑	1	5	1	1	N
9.346	EFS No Dots Present		NDOT	D	1	1	0	1	A
9.347	EFS No Incipient Ridges Present		NINR	D	1	1	0	1	A
9.348	EFS No Creases Present		NCLD	D	1	1	0	1	A
9.349	EFS No Ridge Edge Features Present		NREF	D	1	1	0	1	A
9.35	EFS Method of Feature Detection		MFD	O	n/a	n/a	0	1	n/a
9.350_0	EFS Method of Feature Detection	Subfields: Repeating sets of information items	MFD_0	M↑	n/a	n/a	0	100	n/a
9.350_1	EFS Method of Feature Detection	Field	FIE	M↑	3	999	1	1	ANS
9.350_2	EFS Method of Feature Detection	Method	FME	M↑	3	4	1	1	A
9.350_3	EFS Method of Feature Detection	Algorithm Vendor	FAV	D	1	40	0	1	U
9.350_4	EFS Method of Feature Detection	Algorithm	FAL	D	1	40	0	1	U
9.350_5	EFS Method of Feature Detection	Examiner Surname	ESN	D	1	40	0	1	U
9.350_6	EFS Method of Feature Detection	Examiner Given Name	EGN	D	1	40	0	1	U
9.350_7	EFS Method of Feature Detection	Examiner Affiliation	EAF	D	1	66	0	1	U
9.350_8	EFS Method of Feature Detection	Date and Time	EMT	M↑	15	15	0	1	AN
9.350_9	EFS Method of Feature Detection	Notes	NTS	O↑	1	99	0	1	U
9.351	EFS Comment		COM	O	1	123	0	1	U
9.352	EFS Latent Processing Method		LPM	O	n/a	n/a	0	1	n/a
9.352_0	EFS Latent Processing Method	Subfields: Repeating sets of information items	LPM_0	M↑	3	3	0	10	AN
9.353	EFS Examiner Analysis Assessment		EAA	O	n/a	n/a	0	1	n/a
9.353_1	EFS Examiner Analysis Assessment	Value Assessment Code	AAV	M↑	5	8	1	1	A
9.353_2	EFS Examiner Analysis Assessment	Examiner Last Name	ALN	M↑	1	40	1	1	U
9.353_3	EFS Examiner Analysis Assessment	Examiner First Name	AFN	M↑	1	40	1	1	U
9.353_4	EFS Examiner Analysis Assessment	Examiner Affiliation	AAF	M↑	1	99	1	1	U
9.353_5	EFS Examiner Analysis Assessment	Date and Time (GMT)	AMT	M↑	15	15	1	1	AN
9.353_6	EFS Examiner Analysis Assessment	Comment	ACM	O↑	1	200	0	1	U
9.353_7	EFS Examiner Analysis Assessment	Analysis Complexity Flag	CXF	O↑	7	7	0	1	A
9.354	EFS Evidence of Fraud		EOF	O	n/a	n/a	0	1	n/a
9.354_0	EFS Evidence of Fraud	Subfields: Repeating sets of information items	EOF_0	M↑	n/a	n/a	0	5	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.354_1	EFS Evidence of Fraud	Fraud Type	FRA	M↑	3	3	1	1	A
9.354_2	EFS Evidence of Fraud	Comment	CFD	O↑	1	200	0	1	U
9.355	EFS Latent Substrate		LSB	O	n/a	n/a	0	1	n/a
9.355_0	EFS Latent Substrate	Subfields: Repeating sets of information items	LSB_0	M↑	n/a	n/a	0	4	n/a
9.355_1	EFS Latent Substrate	Code	CLS	M↑	1	2	1	1	AN
9.355_2	EFS Latent Substrate	Object / Substrate Description	OSD	O↑	1	1000	0	1	U
9.356	EFS Latent Matrix		LMT	O	n/a	n/a	0	1	n/a
9.356_0	EFS Latent Matrix	Subfields: Repeating sets of information items	LMT_0	M↑	n/a	n/a	0	4	n/a
9.356_1	EFS Latent Matrix	Code	TOM	M↑	1	2	1	1	N
9.356_2	EFS Latent Matrix	Comment	CLA	O↑	1	1000	0	1	U
9.357	EFS Local Quality Issues		LQI	O	n/a	n/a	0	1	n/a
9.357_0	EFS Local Quality Issues	Subfields: Repeating sets of information items	LQI_0	M↑	n/a	n/a	0	*	n/a
9.357_1	EFS Local Quality Issues	Type	LQT	M↑	4	10	1	1	A
9.357_2	EFS Local Quality Issues	Polygon	LQP	M↑	11	1188	1	1	NS
9.357_3	EFS Local Quality Issues	Comment	LQC	O↑	1	1000	0	1	U
9.36	EFS Area of Correspondence		AOC	O	n/a	n/a	0	1	n/a
9.360_0	EFS Area of Correspondence	Subfields: Repeating sets of information items	AOC_0	M↑	n/a	n/a	1	*	n/a
9.360_1	EFS Area of Correspondence	IDC Reference	CIR	M↑	1	2	1	1	N
9.360_2	EFS Area of Correspondence	Polygon (Closed Path)	AOP	M↑	11	1188	1	1	NS
9.360_3	EFS Area of Correspondence	Comment	CAC	O↑	1	1000	0	1	U
9.361	EFS Correspoding Points or Features		CPF	O	n/a	n/a	0	1	n/a
9.361_0	EFS Correspoding Points or Features	Subfields: Repeating sets of information items	CPF_0	M↑	n/a	n/a	0	*	n/a
9.361_1	EFS Correspoding Points or Features	Label	COL	M↑	1	3	1	1	AN
9.361_2	EFS Correspoding Points or Features	Type of Correspondence	TOC	M↑	1	2	1	1	A
9.361_3	EFS Correspoding Points or Features	Corresponding Field Number	CFN	D	3	3	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.361_4	EFS Correspoding Points or Features	Corresponding Field Occurance	FOC	D	1	3	0	1	N
9.361_5	EFS Correspoding Points or Features	Corresponding X Coordinate	CXC	D	1	5	0	1	N
9.361_6	EFS Correspoding Points or Features	Corresponding Y Coordinate	CYC	D	1	5	0	1	N
9.361_7	EFS Correspoding Points or Features	Comment	COC	O↑	1	1000	0	1	U
9.362	EFS Examiner Comparison Determination		ECD	O	n/a	n/a	0	1	n/a
9.362_0	EFS Examiner Comparison Determination	Subfields: Repeating sets of information items	ECD_0	M↑	n/a	n/a	0	*	n/a
9.362_1	EFS Examiner Comparison Determination	IDC Reference	EDC	M↑	1	2	1	1	N
9.362_2	EFS Examiner Comparison Determination	Determination	EDE	M↑	4	6	1	1	AS
9.362_3	EFS Examiner Comparison Determination	Work In Progress	WIP	M↑	5	11	1	1	A
9.362_4	EFS Examiner Comparison Determination	Examiner Last Name	ELN	M↑	1	40	1	1	U
9.362_5	EFS Examiner Comparison Determination	Examiner First Name	EFN	M↑	1	40	1	1	U
9.362_6	EFS Examiner Comparison Determination	Examiner Affiliation	EAF	M↑	1	99	1	1	U
9.362_7	EFS Examiner Comparison Determination	Date and Time (GMT)	DTG	M↑	15	15	1	1	AN
9.362_8	EFS Examiner Comparison Determination	Comment	CZZ	O↑	1	200	0	1	U
9.362_9	EFS Examiner Comparison Determination	Complex Comparison Flag	CCF	O↑	7	7	0	1	A
9.363	EFS Relative Rotation of Corresponding Print		RRC	O	n/a	n/a	0	1	n/a
9.363_0	EFS Relative Rotation of Corresponding Print	Subfields: Repeating sets of information items	RRC_0	M↑	n/a	n/a	0	*	n/a
9.363_1	EFS Relative Rotation of Corresponding Print	Rotation IDC Reference	RIR	M↑	1	2	1	1	N
9.363_2	EFS Relative Rotation of Corresponding Print	Relative Overall Rotation	ROR	M↑	1	4	1	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.372	EFS Skeletonized Image		SIM	O	8	Unlimited	0	1	Base 64
9.373	EFS Ridge Path Segments		RPS	O	n/a	n/a	3	99	n/a
9.373_0	EFS Ridge Path Segments	Subfields: Repeating sets of information items	RPS_0	M↑	7	1188	3	100	NS
9.38	EFS Temporary Lines		TPL	O	n/a	n/a	0	1	n/a
9.380_0	EFS Temporary Lines	Subfields: Repeating sets of information items	TPL_0	M↑	n/a	n/a	0	100	n/a
9.380_1	EFS Temporary Lines	X Coordinate Point A	TXA	M↑	1	5	1	1	N
9.380_2	EFS Temporary Lines	Y Coordinate Point A	TYA	M↑	1	5	1	1	N
9.380_3	EFS Temporary Lines	X Coordinate Point B	TXB	M↑	1	5	1	1	N
9.380_4	EFS Temporary Lines	Y Coordinate Point B	TYB	M↑	1	5	1	1	N
9.380_5	EFS Temporary Lines	Line Color	TLC	M↑	1	6	1	1	H
9.380_6	EFS Temporary Lines	Line Thickness	TLT	M↑	1	2	1	1	N
9.381	EFS Feature Color		FCC	O	n/a	n/a	0	1	n/a
9.381_0	EFS Feature Color	Subfields: Repeating sets of information items	FCC_0	M↑	n/a	n/a	0	1000	n/a
9.381_1	EFS Feature Color	Feature - Field Number	FTF	M↑	3	3	1	1	N
9.381_2	EFS Feature Color	Feature - Field Occurrence	FTO	M↑	1	3	1	1	N
9.381_3	EFS Feature Color	Feature- Color	FTC	D	6	6	0	1	H
9.381_4	EFS Feature Color	Feature - Comment	COM	D	1	1000	0	1	U
9.901	Universal Latent Annotation		ULA	O	n/a	n/a	0	*	n/a
9.901_0	Universal Latent Annotation	Subfields: Repeating sets of information items	ULA_0	M↑	22	300	0	*	ANS
9.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
9.902_0	Annotated Information	Subfields: Repeating sets of information items	ANN_0	M↑	n/a	n/a	0	*	n/a
9.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
9.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
9.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
9.902_4	Annotated Information	Process Description	PRO	M↑	1	Unlimited	1	1	U
9.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
9.904	Make/Model/Serial Number		MMS	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
9.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
9.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
9.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
10.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
10.002	Information Designation Character		IDC	M	1	2	1	1	N
10.003	Image Type		IMT	M	4	11	1	1	AS
10.004	Source Agency		SRC	M	1	Unlimited	1	1	U
10.005	Photo Capture Date		PHD	M	Dependent on encoding	Dependent on encoding	1	1	N
10.006	Horizontal Line Length		HLL	M	2	5	1	1	N
10.007	Vertical Line Length		VLL	M	2	5	1	1	N
10.008	Scale Units		SLC	M	1	1	1	1	N
10.009	Transmitted Horizontal Pixel Scale		THPS	M	1	5	1	1	N
10.01	Transmitted Vertical Pixel Scale		TVPS	M	1	5	1	1	N
10.011	Compression Algorithm		CGA	M	3	5	1	1	AN
10.012	Color Space		CSP	M	3	4	1	1	A
10.013	Subject Acquisition Profile		SAP	D	1	2	0	1	N
10.014	Face Image Bounding Box Coordinates in Full Image		FIP	D	n/a	n/a	0	1	N
10.014_1	Face Image Bounding Box Coordinates in Full Image	Left Horizontal Coordinate Value	LHC	M↑	1	5	1	1	N
10.014_2	Face Image Bounding Box Coordinates in Full Image	Right Horizontal Coordinate Value	RHC	M↑	1	5	1	1	N
10.014_3	Face Image Bounding Box Coordinates in Full Image	Top Vertical Coordinate Value	TVC	M↑	1	5	1	1	N
10.014_4	Face Image Bounding Box Coordinates in Full Image	Bottom Vertical Coordinate Value	BVC	M↑	1	5	1	1	N
10.014_5	Face Image Bounding Box Coordinates in Full Image	Bounding Box Head Position Code	BBC	O↑	1	1	0	1	A
10.015	Face Image Path Coordinates in Full Image		FPFI	O	n/a	n/a	0	1	n/a
10.015_1	Face Image Path Coordinates in Full Image	Boundary Code	BYC	M↑	1	1	1	1	A
10.015_2	Face Image Path Coordinates in Full Image	Number of Points	NOP	M↑	1	2	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.015_3	Face Image Path Coordinates in Full Image	Horizontal Point Offset	HPO	M↑	1	5	2	NOP	N
10.015_4	Face Image Path Coordinates in Full Image	Vertical Point Offset	VPO	M↑	1	5	2	NOP	N
10.016	Scanned Horizontal Pixel Scale		SHPS	O	1	5	0	1	N
10.017	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
10.018	Distortion		DIST	O	n/a	n/a	0	1	n/a
10.018_1	Distortion	Distortion Code	IDK	M↑	6	10	1	1	A
10.018_2	Distortion	Distortion Measurement Code	IDM	M↑	1	1	1	1	A
10.018_3	Distortion	Distortion Severity Code	DSC	M↑	4	8	1	1	A
10.019	Lighting Artifacts		LAF	D	n/a	n/a	0	1	A
10.019_0	Lighting Artifacts	Subfields: Repeating values	LAF_0	M↑	1	1	1	3	A
10.02	Subject Pose		POS	D	1	1	0	1	A
10.021	Pose Offset Angle		POA	D	1	4	0	1	NS
10.023	Photo Acquisition Source		PAS	D	n/a	n/a	0	1	n/a
10.023_1	Photo Acquisition Source	Photo Attribute Code	PAC	M↑	6	14	1	1	ANS
10.023_2	Photo Acquisition Source	Vendor-Specific Description	VSD	D	1	64	0	1	U
10.024	Subject Quality Score		SQS	D	n/a	n/a	0	1	n/a
10.024_0	Subject Quality Score	Subfields: Repeating sets of information items	SQS_0	M↑	n/a	n/a	1	9	n/a
10.024_1	Subject Quality Score	Quality Value	QVU	M↑	1	3	1	1	N
10.024_2	Subject Quality Score	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
10.024_3	Subject Quality Score	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
10.025	Subject Pose Angles		SPA	D	n/a	n/a	0	1	n/a
10.025_1	Subject Pose Angles	Yaw Angle	YAW	M↑	1	4	1	1	NS
10.025_2	Subject Pose Angles	Pitch Angle	PIT	M↑	1	3	1	1	NS
10.025_3	Subject Pose Angles	Roll Angle	ROL	M↑	1	4	1	1	NS
10.025_4	Subject Pose Angles	Uncertainty in Degrees for Yaw	YAWU	O↑	1	2	0	1	N
10.025_5	Subject Pose Angles	Uncertainty in Degrees for Pitch	PITU	O↑	1	2	0	1	N
10.025_6	Subject Pose Angles	Uncertainty in Degrees for Roll	ROLU	O↑	1	2	0	1	N
10.026	Subject Facial Description		SXS	D	n/a	n/a	0	1	D
10.026_0	Subject Facial Description	Subfields: repeating values	SXS_0	M↑	3	20	1	50	AS
10.027	Subject Eye Color - Repeating values.		SEC	D	3	3	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.028	Subject Hair Color		SHC	D	n/a	n/a	0	1	n/a
10.028_0	Subject Hair Color	Subfields: Repeating values	SHC_0	M↑	3	3	1	2	A
10.029	2D Facial Feature Points		FFP	M↑	n/a	n/a	0	1	n/a
10.029_0	2D Facial Feature Points	Subfields: Repeating sets of information items	FFP_0	M↑	n/a	n/a	1	88	n/a
10.029_1	2D Facial Feature Points	Feature Point Type	FPT	M↑	1	1	1	1	N
10.029_2	2D Facial Feature Points	Feature Point Code	FPC	M↑	3	5	1	1	ANS
10.029_3	2D Facial Feature Points	X Coordinate	HCX	M↑	1	5	1	1	N
10.029_4	2D Facial Feature Points	Y Coordinate	HCY	M↑	1	5	1	1	N
10.03	Device Monitoring Mode		DMM	O	7	10	0	1	A
10.031	Tiered Markup Collection		TMC	D	1	3	0	1	N
10.032	3D Facial Feature Points		3DF	D	n/a	n/a	0	1	n/a
10.032_0	3D Facial Feature Points	Subfields: Repeating sets of information items	FFP_0	M↑	n/a	n/a	1	88	n/a
10.032_1	3D Facial Feature Points	Feature Point Type	FPT	M↑	1	1	1	1	N
10.032_2	3D Facial Feature Points	Feature Point Code	FPC	M↑	3	5	1	1	ANS
10.032_3	3D Facial Feature Points	X Coordinate	HCX	M↑	1	5	1	1	N
10.032_4	3D Facial Feature Points	Y Coordinate	HCY	M↑	1	5	1	1	N
10.032_5	3D Facial Feature Points	Z Coordinate	HCZ	M↑	1	5	1	1	N
10.033	Feature Contours		FEC	D	n/a	n/a	0	1	n/a
10.033_0	Feature Contours	Subfields: Repeating sets of information items	FEC_0	M↑	n/a	n/a	1	12	n/a
10.033_1	Feature Contours	Feature Contour Code	FCC	M↑	4	14	1	1	A
10.033_2	Feature Contours	Number of Points	NOP	M↑	1	2	1	1	N
10.033_3	Feature Contours	Horizontal Point Offset	HPO	M↑	1	5	3	NOP	N
10.033_4	Feature Contours	Vertical Point Offset	VPO	M↑	1	5	3	NOP	N
10.034	IMAGE CAPTURE DATE RANGE ESTIMATE		ICDR	O	3	9	0	1	AN
10.038	Comment		COM	O	1	126	0	1	U
10.039	Type-10 Reference Number		T10	D	1	3	0	1	AN
10.04	NCIC SMT Code		SMT	D	n/a	n/a	0	1	n/a
10.040_0	NCIC SMT Code	Subfields: Repeating values	SMT_0	M↑	3	10	1	3	AS
10.041	SMT SIZE OR SIZE OF INJURY OR IDENTIFYING CHARACTERISTIC		SMS	D	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.041_1	SMT SIZE OR SIZE OF INJURY OR IDENTIFYING CHARACTERISTIC	Height	HGT	M↑	1	3	1	1	N
10.041_2	SMT SIZE OR SIZE OF INJURY OR IDENTIFYING CHARACTERISTIC	Width	WID	M↑	1	3	1	1	N
10.042	SMT Descriptors		SMD	M↑	n/a	n/a	0	1	n/a
10.042_0	SMT Descriptors	Subfields: Repeating values	SMD_0	M↑	n/a	n/a	1	9	n/a
10.042_1	SMT Descriptors	SMT code indicator	SMI	M↑	3	8	1	1	A
10.042_2	SMT Descriptors	Tattoo Class	TAC	D	4	8	0	1	A
10.042_3	SMT Descriptors	Tattoo Subclass	TSC	D	3	11	0	1	A
10.042_4	SMT Descriptors	Tattoo Description	TDS	D	1	256	0	1	U
10.043	Tattoo Color		COL	D	n/a	n/a	0	1	D
10.043_0	Tattoo Color	Subfields: repeating values in the same order as those of SMD	COL_0	M↑	n/a	n/a	1	9	n/a
10.043_1	Tattoo Color	Tattoo Color Code 1	TC1	O↑	3	7	1	1	A
10.043_2	Tattoo Color	Tattoo Color Code 2	TC2	O↑	3	7	0	1	A
10.043_3	Tattoo Color	Tattoo Color Code 3	TC3	O↑	3	7	0	1	A
10.043_4	Tattoo Color	Tattoo Color Code 4	TC4	O↑	3	7	0	1	A
10.043_5	Tattoo Color	Tattoo Color Code 5	TC5	O↑	3	7	0	1	A
10.043_6	Tattoo Color	Tattoo Color Code 6	TC6	O↑	3	7	0	1	A
10.044	Image Transform		ITX	O	n/a	n/a	0	1	n/a
10.044_0	Image Transform	Subfields: Repeating values	ITX_0	M↑	3	11	1	18	A
10.045	Occlusions		OCC	D	n/a	n/a	0	1	n/a
10.045_0	Occlusions	Subfields: Repeating values	OCC_0	M↑	n/a	n/a	1	16	n/a
10.045_1	Occlusions	Occlusion Opacity	OCY	M↑	1	1	1	1	A
10.045_2	Occlusions	Occlusion Type	OCT	M↑	1	1	1	1	N
10.045_3	Occlusions	Number of Points	NOP	M↑	1	2	1	1	N
10.045_4	Occlusions	Horizontal Point Offset	HPO	M↑	1	5	3	NOP	N
10.045_5	Occlusions	Vertical Point Offset	VPO	M↑	1	5	3	NOP	N
10.046	Image Subject Condition		SUB	D	n/a	n/a	0	1	n/a
10.046_1	Image Subject Condition	Subject Status Code	SSC	M↑	1	1	1	1	A
10.046_2	Image Subject Condition	Subject Body Status Code	SBSC	M↑	1	1	0	1	N
10.046_3	Image Subject Condition	Subject Body Class Code	SBCC	M↑	1	1	0	1	N
10.047	Capture Organization Name		CON	O	1	Unlimited	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.048	Suspected Patterned Injury Detail		PID	O	n/a	n/a	0	1	n/a
10.048_0	Suspected Patterned Injury Detail	Subfields: Repeating sets of information items	PID_0	M↑	n/a	n/a	1	Unlimited	n/a
10.048_1	Suspected Patterned Injury Detail	ADA Reference Code List	PARC	O↑	1	30	0	1	NS
10.048_2	Suspected Patterned Injury Detail	Additional Descriptive Text	PADT	O↑	1	Unlimited	0	1	U
10.049	Cheilioscopic Image Description		CID	D	n/a	n/a	0	1	n/a
10.049_1	Cheilioscopic Image Description	Lip Print Width	LPW	O↑	1	4	0	1	N
10.049_2	Cheilioscopic Image Description	Lip Print Height	LPH	O↑	1	4	0	1	N
10.049_3	Cheilioscopic Image Description	Philtrum Width	PHW	O↑	1	4	0	1	N
10.049_4	Cheilioscopic Image Description	Philtrum Height	PHH	O↑	1	4	0	1	N
10.049_5	Cheilioscopic Image Description	Upper Lip Characterization List	ULCL	O↑	1	2	0	1	AS
10.049_6	Cheilioscopic Image Description	Lower Lip Characterization List	LLCL	O↑	1	2	0	1	AS
10.049_7	Cheilioscopic Image Description	Lip Contact Line Descriptor	LCLD	O↑	1	1	0	1	A
10.049_8	Cheilioscopic Image Description	Lip Print Characterization Text	LPCT	O↑	1	Unlimited	0	1	U
10.049_9	Cheilioscopic Image Description	Lip Print Pathologies and Peculiarities List	LPPL	O↑	1	Unlimited	0	1	NS
10.049_10	Cheilioscopic Image Description	Lip Print Pathologies and Peculiarities Descriptive Text	LPPT	O↑	1	Unlimited	0	1	U
10.049_11	Cheilioscopic Image Description	Lip Print Surface List	LPSL	O↑	1	Unlimited	0	1	NS
10.049_12	Cheilioscopic Image Description	Lip Print Surface Descriptive Text	LPST	O↑	1	Unlimited	0	1	U
10.049_13	Cheilioscopic Image Description	Lip Print Medium Code	LPMC	O↑	1	1	0	1	N
10.049_14	Cheilioscopic Image Description	Lip Print Medium Descriptive Text	LPMT	O↑	1	Unlimited	0	1	U
10.049_15	Cheilioscopic Image Description	Facial Hair Descriptive Text	FHDT	O↑	1	Unlimited	0	1	U
10.049_16	Cheilioscopic Image Description	Lip Print Position and Tension Text	LPDT	O↑	1	Unlimited	0	1	U
10.049_17	Cheilioscopic Image Description	Lip Print Additional Descriptive Text	LPAT	O↑	1	Unlimited	0	1	U
10.049_18	Cheilioscopic Image Description	Lip Print Comparison Descriptive Text	LPCD	O↑	1	Unlimited	0	1	U
10.05	Dental Visual Image Data Information		VID	O	n/a	n/a	0	1	n/a
10.050_1	Dental Visual Image Data Information	Visual Image View Code	VIVC	M↑	3	4	1	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.050_2	Dental Visual Image Data Information	Visual Image Additional Descriptive Text	VIDT	D	1	Unlimited	0	1	U
10.050_3	Dental Visual Image Data Information	Visual Image Comparison Descriptive Text	VICD	D	1	Unlimited	0	1	U
10.051	Ruler or Scale Presence		RSP	O	n/a	n/a	0	1	n/a
10.051_1	Ruler or Scale Presence	Ruler or Scale Units	RSU	D	2	4	0	1	A
10.051_2	Ruler or Scale Presence	Ruler or Scale Make	RSM	D	1	50	0	1	U
10.051_3	Ruler or Scale Presence	Ruler or Scale Model	RSO	O	1	50	0	1	U
10.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
10.902_0	Annotated Information	Subfields: Repeating sets of information items	ANN	M↑	n/a	n/a	1	Unlimited	n/a
10.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	Dependent on encoding	Dependent on encoding	1	1	AN
10.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
10.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
10.902_4	Annotated Information	Process Description	PRO	M↑	1	Unlimited	1	1	U
10.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
10.904	Make/Model/Serial Number		MMS	O	n/a	n/a	0	1	n/a
10.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	1	1	U
10.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	1	1	U
10.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	1	1	U
10.992	Biometric Cross Reference Identification		T2C	O	1	2	0	1	N
10.993	Source Agency Name		SAN	O	1	125	0	1	U
10.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
10.995_0	Associated Context	Subfields: Repeating sets of information items	ASC_0	M↑	n/a	n/a	1	255	n/a
10.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	AN
10.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	N
10.996	Hash		HAS	O	64	64	0	1	H
10.997	Source Representation		SOR	O	n/a	n/a	0	1	n/a
10.997_0	Source Representation		SOR_0	M↑	n/a	n/a	1	255	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
10.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
10.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	AN
10.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
10.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	Dependent on encoding	Dependent on encoding	0	1	AN
10.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
10.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
10.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
10.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
10.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
10.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
10.998_08	Geographic Sample Acquisition Location	Elevation	ELE	D	1	8	0	1	NS
10.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	D	3	6	0	1	AN
10.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	2	3	0	1	AN
10.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
10.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
10.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
10.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	0	1	U
10.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
10.999	Body Part Image		DATA	M	1	Unlimited	1	1	B
11.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.002	Information Designation Character		IDC	M	1	2	1	1	integer
11.003	Audio Object Descriptor Code		AOD	M	1	1	1	1	T = integer, X = AudioObjectDescriptorCodeType
11.004	Source Agency		SRC	M	1	Unlimited	1	1	none
11.005	Voice Recording Source Organization		VRSO	O	n/a	n/a	0	1	n/a
11.005_1	Voice Recording Source Organization	Source Organization Type Code	STC	M↑	1	1	1	1	A
11.005_2	Voice Recording Source Organization	Source Organization Name	SON	O↑	1	400	0	1	U
11.005_3	Voice Recording Source Organization	Point Of Contact	POC	O↑	1	200	0	1	U
11.005_4	Voice Recording Source Organization	Record Setting Detail Country Code	CSC	O↑	2	3	0	1	AN
11.006	Voice Recording Content Descriptor		VRC	O	n/a	n/a	0	1	n/a
11.006_1	Voice Recording Content Descriptor	Assigned Voice Indicator	AVI	M↑	1	1	1	1	A
11.006_2	Voice Recording Content Descriptor	Speaker Plurality Code	SPC	O↑	1	1	0	1	A
11.006_3	Voice Recording Content Descriptor	Comment	COM	O↑	1	Unlimited	0	1	U
11.007	Audio Recording Device		AREC	O	n/a	n/a	0	1	n/a
11.007_1	Audio Recording Device	Recording Device Descriptive Text	RDD	O↑	1	Unlimited	0	1	U
11.007_2	Audio Recording Device	Recording Device Make	MAK	O↑	1	50	0	1	U
11.007_3	Audio Recording Device	Recording Device Model	MOD	O↑	1	50	0	1	U
11.007_4	Audio Recording Device	Recording Device Serial Number	SER	O↑	1	50	0	1	U
11.008	Acquisition Source		AQS	D	n/a	n/a	0	1	n/a
11.008_1	Acquisition Source	Acquisition Source Code	AQC	M↑	1	2	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.008_2	Acquisition Source	Analog To Digital Conversion Description	A2D	D	1	Unlimited	0	1	U
11.008_3	Acquisition Source	Contains Radio Transmission Format Description.	FDN	D	1	Unlimited	0	1	U
11.008_4	Acquisition Source	Contains Acquisition Special Characteristics.	AQSC	O↑	1	Unlimited	0	1	U
11.009	Record Creation Date	Record Creation Date	RCD	M	Dependent on Encoding	Dependent on Encoding	1	1	AN
11.01	Total Recording Duration	Voice Recording Creation Date	VRD	O	Dependent on Encoding	Dependent on Encoding	0	1	AN
11.011	Voice Recording Date	Total Recording Duration	TRD	O	n/a	n/a	0	1	n/a
11.011_1	Voice Recording Date	Voice Recording Time	TIM	O↑	1	11	0	1	N
11.011_2	Voice Recording Date	Compressed Bytes	CBY	O↑	1	14	0	1	N
11.011_3	Voice Recording Date	Total Digital Samples	TSM	O↑	1	14	0	1	N
11.012	Physical Media Object		PMO	D	n/a	n/a	0	1	n/a
11.012_1	Physical Media Object	Media Type Description	MTD	M↑	1	300	1	1	U
11.012_2	Physical Media Object	Recording Speed	RSP	O↑	1	9	0	1	NS
11.012_3	Physical Media Object	Recording Speed Measurement Units Description Text	RSU	D	1	Unlimited	0	1	U
11.012_4	Physical Media Object	Equalization Description	EQD	O↑	1	Unlimited	0	1	U
11.012_5	Physical Media Object	Track Count	TRC	O↑	1	4	0	1	N
11.012_6	Physical Media Object	Speaker Track Number	STK	O↑	1	4	0	9999	NS
11.012_7	Physical Media Object	Comment	COM	O↑	1	Unlimited	0	1	U
11.013	Container		CONT	O	n/a	n/a	0	1	n/a
11.013_1	Container	Container Code	CONC	M↑	1	2	0	1	N
11.013_2	Container	External Container Reference Code	ECON	D	1	80	0	1	U
11.013_3	Container	Comment	COM	D	1	Unlimited	0	1	U
11.014	Codec		CDC	D	n/a	n/a	0	1	n/a
11.014_1	Codec	Codec Code	CODC	O↑	1	2	0	1	N
11.014_2	Codec	Sampling Rate Number	SRTN	O↑	1	9	0	1	N
11.014_3	Codec	Bit Depth Count	BITD	O↑	1	4	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.014_4	Codec	Endian Code	ENDC	O↑	1	1	0	1	N
11.014_5	Codec	Numeric Format	NFMT	O↑	1	5	0	1	AN
11.014_6	Codec	Channel Count	CHC	O↑	1	4	0	1	N
11.014_7	Codec	External Codec Reference Code	ECOD	D	1	80	0	1	U
11.014_8	Codec	Comment	COM	D	1	Unlimited	0	1	U
11.021	Redaction		RED	O	n/a	n/a	0	1	n/a
11.021_1	Redaction	Redaction Indicator	RDI	M↑	0	1	1	1	N
11.021_2	Redaction	Redaction Authority Organization Name	RDA	D	1	300	0	1	U
11.021_3	Redaction	Comment	COM	O↑	1	Unlimited	0	1	U
11.022	Redaction		RDD	O	n/a	n/a	0	1	n/a
11.022_0	Redaction	Subfields: Repeating Sets Of Information Items	RDD_0	M↑	n/a	n/a	0	600000	n/a
11.022_1	Redaction Diary	Segment Identifier	SID	M	1	6	1	1	N
11.022_2	Redaction Diary	Track And Channel Number List	TRK	D	1	4	0	9999	NS
11.022_3	Redaction Diary	Relative Start Time	RST	M↑	1	Unlimited	1	1	N
11.022_4	Redaction Diary	Relative End Time	RET	M↑	1	Unlimited	1	1	N
11.022_5	Redaction Diary	Comment	COM	O↑	1	Unlimited	0	1	U
11.023	Redaction Diary		DIS	O	n/a	n/a	0	1	n/a
11.023_1	Discontinuities	Discontinuity Indicator	DCI	M↑	1	1	1	1	N
11.023_2	Discontinuities	Cutting Authority Organization Name	CTA	D	1	300	0	1	U
11.023_3	Discontinuities	Comments	COM	O↑	1	Unlimited	0	1	U
11.024	Discontinuities	Discontinuities Diary	DCD	O	n/a	n/a	0	1	n/a
11.024_0	Discontinuities	Subfields: Repeating Sets Of Information Items	DCD_0	M↑	n/a	n/a	0	600000	n/a
11.024_1	Discontinuities Diary	Segment Identifier	SID	M↑	1	6	1	1	N
11.024_2	Discontinuities Diary	Track And Channel Number List	TRK	M↑	1	4	0	9999	NS
11.024_3	Discontinuities Diary	Relative Start Time	RST	M	1	Unlimited	1	1	N
11.024_4	Discontinuities Diary	Relative End Time	RET	M↑	1	Unlimited	1	1	N
11.024_5	Discontinuities Diary	Comment	COM	O↑	1	Unlimited	0	1	U
11.025	Vocal Content		VOC	O	n/a	n/a	0	1	n/a
11.025_1	Vocal Content	Diarization Indicator	DII	M↑	1	1	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.025_2	Vocal Content	Diarization Authority Organization Name	DAU	O↑	1	300	0	1	U
11.025_3	Vocal Content	Comments	COM	O↑	1	Unlimited	0	1	U
11.026	Vocal Content		VCD	O	n/a	n/a	0	1	n/a
11.026_0	Vocal Content	Subfields: Repeating Sets Of Information Items	VCD_0	M↑	n/a	n/a	0	600000	n/a
11.026_1	Vocal Content Diary	Segment Identifier	SID	M↑	1	6	1	1	N
11.026_2	Vocal Content Diary	Track And Channel Number List	TRK	D	1	4	0	9999	NS
11.026_3	Vocal Content Diary	Relative Start Time	RST	M↑	1	11	1	1	N
11.026_4	Vocal Content Diary	Relative End Time	RET	M↑	1	Unlimited	1	1	N
11.026_5	Vocal Content Diary	Comment	COM	O↑	1	Unlimited	0	1	U
11.026_6	Vocal Content Diary	Tagged Data	TDT	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.026_7	Vocal Content Diary	Tagged Start Time	TST	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.026_8	Vocal Content Diary	Tagged End Time	TET	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.026_9	Vocal Content Diary	Original Recording Date	ORD	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.026_10	Vocal Content Diary	Segment Recording Start Time	SRT	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.026_11	Vocal Content Diary	Segment Recording End Time	END	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.026_12	Vocal Content Diary	Time Source Description Text	TMD	O↑	1	300	0	1	U
11.026_13	Vocal Content Diary	Timing Comments	TCOM	O↑	1	Unlimited	0	1	U
11.027	Vocal Content Diary	Other Content	OCON	O↑	n/a	n/a	0	1	n/a
11.027_1	Other Content	Diarization Indicator	DII	M↑	1	1	1	1	N
11.027_2	Other Content	Diarization Authority	DAU	D	1	300	0	1	U
11.027_3	Other Content	Comments	COM	O↑	1	Unlimited	0	1	U
11.028	Other Content		OCD	O	n/a	n/a	0	1	n/a
11.028_0	Other Content	Subfields: Repeating Sets Of Information Items	OCD_0		n/a	n/a	0	600000	n/a
11.028_1	Other Content	Segment Identifier	SID	M	1	6	1	1	N
11.028_2	Other Content	Track And Channel Number List	TRK	D	1	4	0	9999	NS
11.028_3	Other Content	Relative Start Time	RST	M↑	1	11	1	1	N
11.028_4	Other Content	Relative End Time	RET	M↑	1	Unlimited	1	1	N
11.028_5	Other Content	Comment	COM	O↑	1	Unlimited	0	1	U
11.028_6	Other Content	Tagged Data	TDT	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.028_7	Other Content	Tagged Start Time	TST	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.028_8	Other Content	Tagged End Time	TET	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.028_9	Other Content	Original Recording Date	ORD	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.028_10	Other Content	Segment Recording Start Time	SRT	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.028_11	Other Content	Segment Recording End Time	END	O↑	Dependent on Encoding	Dependent on Encoding	0	1	Dependent on Encoding
11.028_12	Other Content	Time Source Description Text	TMD	O↑	1	300	0	1	U
11.028_13	Other Content	Timing Comments	TCOM	O↑	1	Unlimited	0	1	U
11.032	Vocal Segment Geographical Information		SGEO	D	n/a	n/a	0	1	n/a
11.032_0	Vocal Segment Geographical Information	Subfield: Repeating Sets of Information Items	SGEO_0	M↑	n/a	n/a	0	1	n/a
11.032_01	Vocal Segment Geographical Information	Segment Identifier List	SIL	M↑	1	6	1	600000	NS
11.032_02	Vocal Segment Geographical Information	Segment Cell Phone Tower Code	SCT	O↑	1	100	0	1	U
11.032_03	Vocal Segment Geographical Information	Latitude Degree Value	LTD	D	1	9	1	1	NS
11.032_04	Vocal Segment Geographical Information	Latitude Minute Value	LTM	D	1	8	0	1	NS
11.032_05	Vocal Segment Geographical Information	Latitude Second Value	LTS	D	1	8	0	1	NS
11.032_06	Vocal Segment Geographical Information	Longitude Degree Value	LGD	D	1	10	0	1	NS
11.032_07	Vocal Segment Geographical Information	Longitude Minute Value	LGM	D	1	8	0	1	NS
11.032_08	Vocal Segment Geographical Information	Longitude Second Value	LGS	D	1	8	0	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.032_09	Vocal Segment Geographical Information	Elevation	ELE	D	1	8	0	1	NS
11.032_10	Vocal Segment Geographical Information	Geodetic Datum Code	GDC	D	3	6	0	1	AN
11.032_11	Vocal Segment Geographical Information	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	2	3	0	1	AN
11.032_12	Vocal Segment Geographical Information	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
11.032_13	Vocal Segment Geographical Information	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
11.032_14	Vocal Segment Geographical Information	Geographic Reference Text	GRT	O	1	150	1	1	U
11.032_15	Vocal Segment Geographical Information	Geographic Coordinate Other System Identifier (or Landmark)	OSI	O	1	10	1	1	U
11.032_16	Vocal Segment Geographical Information	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
11.033	Vocal Segment Quality Values		SQV	D	n/a	n/a	0	1	n/a
11.033_0	Vocal Segment Quality Values	Subfield: Repeating Sets of Information Items	SQV_0	M↑	n/a	n/a	0	9	n/a
11.033_1	Vocal Segment	Segment Identifier List	SIL	M↑	1	6	0	600000	NS
11.033_2	Vocal Segment Quality Values	Quality Value	QVU	M↑	1	3	1	1	N
11.033_3	Vocal Segment Quality Values	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
11.033_4	Vocal Segment Quality Values	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
11.033_5	Vocal Segment Quality Values	Comments	COM	D	0	Unlimited	0	1	U
11.034	Vocal Collision Identifier		VCI	D	n/a	n/a	0	1	N
11.034_0	Vocal Collision Identifier	Subfield: Repeating Sets Of Information Items	VCI_0	M↑	1	6	0	600000	N
11.035	Vocal Segment Processing Priority		PPY	M	n/a	n/a	0	1	n/a
11.035_0	Vocal Segment Processing Priority	Subfield: Repeating Sets Of Information Items	PPY_0	M↑	n/a	n/a	0	9	n/a
11.035_1	Vocal Segment Processing Priority	Segment Identifier List	SIL	M↑	1	6	0	600000	NS
11.035_2	Vocal Segment Processing Priority	Priority	PTY	M↑	1	1	1	1	N
11.036	Vocal Segment Processing Priority		VSCT	D	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.036_0	Vocal Segment Processing Priority	Subfield: Repeating Sets Of Information Items	VSCT_0	M↑	n/a	n/a	0	600000	n/a
11.036_1	Vocal Segment Processing Priority	Segment Identifier List	SIL	M↑	1	6	0	600000	NS
11.036_2	Vocal Segment Processing Priority	Transcript Text	TRN	O↑	1	Unlimited	0	1	U
11.036_3	Vocal Segment Processing Priority	Transcript Language	LNG	O↑	3	3	0	1	A
11.036_4	Vocal Segment Processing Priority	Phonetic Transcript Text	PTT	O↑	1	Unlimited	0	1	U
11.036_5	Vocal Segment Processing Priority	Phonetic Transcript Convention	PTC	O↑	1	100	0	1	U
11.036_6	Vocal Segment Processing Priority	Translation Text	TLT	O↑	1	Unlimited	0	1	U
11.036_7	Vocal Segment Processing Priority	Translation Language	TLG	O↑	3	3	0	1	A
11.036_8	Vocal Segment Processing Priority	Segment Content Comment	COM	O↑	1	Unlimited	0	1	U
11.036_9	Vocal Segment Processing Priority	Transcript Authority Comment Text	TAC	O↑	1	Unlimited	0	1	U
11.037	Vocal Segment Speaker Characteristics		SCC	D	n/a	n/a	0	1	n/a
11.037_0	Vocal Segment Speaker Characteristics	Subfield: Repeating Sets Of Information Items	SCC_0	M↑	n/a	n/a	0	600000	n/a
11.037_1	Vocal Segment Speaker Characteristics	Segment Identifier List	SIL	M↑	1	6	0	600000	NS
11.037_2	Vocal Segment Speaker Characteristics	Speaker List	SPL	O↑	1	4	0	9999	U
11.037_3	Vocal Segment Speaker Characteristics	Type-2 Record Cross Reference	T2C	O↑	1	2	0	98	NS
11.037_4	Vocal Segment Speaker Characteristics	Impairment Level Number	IMP	O↑	1	1	0	1	N
11.037_5	Vocal Segment Speaker Characteristics	Dominant Spoken	DSL	O↑	3	3	0	1	A
11.037_6	Vocal Segment Speaker Characteristics	Language Code	LPS	O↑	1	1	0	1	N
11.037_7	Vocal Segment Speaker Characteristics	Speech Style Code	STY	O↑	1	2	0	1	N
11.037_8	Vocal Segment Speaker Characteristics	Intelligibility Scale Code	INT	O↑	0	1	0	1	N
11.037_9	Vocal Segment Speaker Characteristics	Familiarity Degree Code	FDC	O↑	0	1	0	1	N
11.037_10	Vocal Segment Speaker Characteristics	Health Comment	HCM	O↑	0	Unlimited	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.037_11	Vocal Segment Speaker Characteristics	Emotional State Code	EMC	O↑	1	2	0	1	N
11.037_12	Vocal Segment Speaker Characteristics	Vocal Effort Scale Number	VES	O↑	1	1	0	1	N
11.037_13	Vocal Segment Speaker Characteristics	Vocal Style Code	VSC	O↑	1	2	0	1	N
11.037_14	Vocal Segment Speaker Characteristics	Recording Awareness Indicator	RAI	O↑	1	1	0	1	N
11.037_15	Vocal Segment Speaker Characteristics	Script Text	SCR	O↑	1	Unlimited	0	1	U
11.037_16	Vocal Segment Speaker Characteristics	Comments	COM	O↑	1	Unlimited	0	1	U
11.038	Vocal Segment Channel		SCH	D	n/a	n/a	0	1	n/a
11.038_0	Vocal Segment Channel	Subfield: Repeating Sets Of Information Items	SCH_0	M↑	n/a	n/a	0	600000	n/a
11.038_1	Vocal Segment Channel	Segment Identifier List	SIL	M↑	1	6	1	600000	NS
11.038_2	Vocal Segment Channel	Audio Capture Device Code	ACD	O↑	1	2	0	1	N
11.038_3	Vocal Segment Channel	Microphone Type Code	MTC	O↑	1	1	0	1	N
11.038_4	Vocal Segment Channel	Capture Environment Description Text	ENV	O↑	1	Unlimited	0	1	U
11.038_5	Vocal Segment Channel	Transducer Distance	DST	O↑	1	5	0	1	N
11.038_6	Vocal Segment Channel	Acquisition Source Code	AQC	O↑	1	2	0	1	N
11.038_7	Vocal Segment Channel	Voice Modification Description Text	VMT	O↑	1	Unlimited	0	1	U
11.038_8	Vocal Segment Channel	Comments	COM	O↑	1	Unlimited	0	1	U
11.051	Comments		COM	O↑	1	Unlimited	0	1	U
11.902	Annotation Information		ANN	O	n/a	n/a	0	1	n/a
11.902_0	Annotated Information	Subfields: Repeating Sets Of Information Items	ANN_0	D	n/a	n/a	0	*	n/a
11.902_1	Annotation Information	Greenwich Mean Time	GMT	M↑	dependent on encoding	dependent on encoding	1	1	encoding specific
11.902_2	Annotation Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
11.902_3	Annotation Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
11.902_4	Annotation Information	Process Description	PRO	M↑	1	Unlimited	1	1	U
11.993	Source Agency Name		SAN	O	1	125	0	1	U
11.994	External Reference File		EFR	D	1	200	0	1	U
11.995	Associated Context		ASC	O	n/a	n/a	0	255	n/a
11.995_0	Associated Context	Subfields: Repeating Sets Of Information Items	ASC_0	M↑	n/a	n/a	0	255	n/a
11.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	N
11.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	N
11.996	Hash		HAS	O	64	64	0	1	H
11.997	Source Representation		SOR	O	64	64	0	255	H
11.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
11.999	Data	Voice Data	DATA	D	1	Unlimited	0	1	Base64
13.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
13.002	Information Designation Character		IDC	M	1	2	1	1	N
13.003	Impression Type		IMP	M	1	2	1	1	N
13.004	Source Agency		SRC	M	1	*	1	1	U
13.005	Latent Capture Date		LCD	M	Dependent upon encoding	Dependent upon encoding	1	1	N
13.006	Horizontal Line Length		HLL	M	2	5	1	1	N
13.007	Vertical Line Length		VLL	M	2	5	1	1	N
13.008	Scale Units		SLC	M	1	1	1	1	N
13.009	Transmitted Horizontal Pixel Scale		THPS	M	1	5	1	1	N
13.01	Transmitted Vertical Pixel Scale		TVPS	M	1	5	1	1	N
13.011	Compression Algorithm		CGA	M	3	5	1	1	AN
13.012	Bits Per Pixel		BPX	M	1	2	1	1	N
13.013	Friction Ridge Generalized Position		FGP	M	n/a	n/a	0	1	N
13.013_0	Friction Ridge Generalized Position	Subfield: Repeating Sets Of Information Items	FGP_0	M↑	1	2	1	6	N
13.014	Search Position Descriptors		SPD	D	n/a	n/a	0	1	n/a
13.014_0	Search Position Descriptors	Subfield: Repeating Sets Of Information Items	SPD_0	M↑	n/a	n/a	1	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
13.014_1	Search Position Descriptors	Probable Decimal Finger Position Code	PDF	M↑	1	2	0	9	N
13.014_2	Search Position Descriptors	Finger Image Code	FIC	M↑	3	3	0	9	AN
13.015	Print Position Coordinates		PPC	D	n/a	n/a	0	1	n/a
13.015_0		Subfield: Repeating Sets Of Information Items	PPC_0	M↑	n/a	n/a	0	12	n/a
13.015_1	Print Position Coordinates	Full Finger View	FVC	M↑	2	3	1	1	AN
13.015_2	Print Position Coordinates	Location of Segment	LOS	M↑	2	3	1	1	AN
13.015_3	Print Position Coordinates	Left Horizontal Coordinate	LHC	M↑	1	5	1	1	N
13.015_4	Print Position Coordinates	Right Horizontal Coordinate	RHC	M↑	1	5	1	1	N
13.015_5	Print Position Coordinates	Top Vertical Coordinate	TVC	M↑	1	5	1	1	N
13.015_6	Print Position Coordinates	Bottom Vertical Coordinate	BVC	M↑	1	5	1	1	N
13.016	Scanned Horizontal Pixel Scale		SHPS	O	1	5	0	1	N
13.017	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
13.018	Ruler or Scale Presence		RSP	O	n/a	n/a	0	1	n/a
13.018_1	Ruler or Scale Presence	Ruler or Scale Units	RSU	D	2	4	0	1	A
13.018_2	Ruler or Scale Presence	Ruler or Scale Make	RSM	D	1	50	0	1	U
13.018_3	Ruler or Scale Presence	Ruler or Scale Model	RSO	D	1	50	0	1	U
13.018_4	Ruler or Scale Presence	Standard Fingerprint Form Number	RSF	D	1	99	0	1	U
13.019	Resolution Method		REM	O	n/a	n/a	0	1	n/a
13.019_1	Resolution Method	Means of Determining Resolution	MDR	M↑	1	9	0	1	AS
13.019_2	Resolution Method	Known Scale Length	KSL	D	1	6	0	1	NS
13.019_3	Resolution Method	Known Scale Units	KSU	D	2	2	0	1	A
13.019_4	Resolution Method	Known Scale X Coordinate for Point A	SXA	D	1	5	0	1	N
13.019_5	Resolution Method	Known Scale Y Coordinate for Point A	SYA	D	1	5	0	1	N
13.019_6	Resolution Method	Known Scale X Coordinate for Point B	SXB	D	1	5	0	1	N
13.019_7	Resolution Method	Known Scale Y Coordinate for Point B	SYB	D	1	5	0	1	N
13.019_8	Resolution Method	Comment	COM	O↑	1	99	0	1	U
13.02	Comment		COM	O	1	126	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
13.024	Latent Quality Metric		LQM	O	n/a	n/a	0	1	n/a
13.024_0	Latent Quality Metric		LQM_0	M↑	n/a	n/a	0	9	n/a
13.024_1	Latent Quality Metric	Friction Ridge Metric Position	FRMP	M↑	1	2	1	1	N
13.024_2	Latent Quality Metric	Quality Value	QVU	M↑	1	3	1	1	N
13.024_3	Latent Quality Metric	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
13.024_4	Latent Quality Metric	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
13.046	Image Subject Condition		SUB	O	n/a	n/a	0	1	n/a
13.046_1	Image Subject Condition	Subject Status Code	SSC	M↑	1	1	1	1	A
13.046_2	Image Subject Condition	Subject Body Status Code	SBSC	D	1	1	0	1	N
13.046_3	Image Subject Condition	Subject Body Class Code	SBCC	D	1	1	0	1	N
13.047	Capture Organization Name		CON	O	1	1000	0	1	U
13.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
13.902_0	Annotated Information	Subfield: Repeating Sets Of Information Items	ANN_0	M↑	n/a	n/a	0	*	n/a
13.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
13.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	*	1	1	U
13.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
13.902_4	Annotated Information	Process Description	PRO	M↑	1	255	1	1	U
13.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
13.904	Make/Model/Serial Number		MMS	O	n/a	n/a	1	1	n/a
13.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
13.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
13.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
13.993	Source Agency Name		SAN	O	1	125	0	1	U
13.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
13.995_0	Associated Context		ASC_0	M↑	n/a	n/a	0	255	n/a
13.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	n/a
13.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	n/a
13.996	Hash		HAS	O	64	64	0	1	H
13.997	Source Representation		SOR	O	n/a	n/a	0	1	n/a
13.997_0	Source Representation		SOR_0	M↑	n/a	n/a	0	255	n/a
13.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
13.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	N
13.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
13.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	15	15	0	1	AN
13.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
13.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
13.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
13.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
13.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
13.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
13.998_08	Geographic Sample Acquisition Location	Elevation	ELE	O	3	8	1	1	NS
13.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	2	6	0	1	AN
13.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	1	3	0	1	AN
13.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
13.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
13.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
13.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	0	1	U
13.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	1	1	U
13.999	Latent Friction Ridge Image		DATA	D	1	*	0	1	B
14.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
14.002	Information Designation Character		IDC	M	1	2	1	1	N
14.003	Impression Type		IMP	M	1	2	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
14.004	Source Agency		SRC	M	1	Unlimited	1	1	U
14.005	Fingerprint Capture Date		FCD	M	Dependent upon encoding	Dependent upon encoding	1	1	N
14.006	Horizontal Line Length		HLL	D	2	5	0	1	N
14.007	Vertical Line Length		VLL	D	2	5	0	1	N
14.008	Scale Units		SLC	D	1	1	0	1	N
14.009	Transmitted Horizontal Pixel Scale		THPS	D	1	5	0	1	N
14.01	Transmitted Vertical Pixel Scale		TVPS	D	1	5	0	1	N
14.011	Compression Algorithm		CGA	D	3	5	0	1	AN
14.012	Bits Per Pixel		BPX	D	1	2	1	1	N
14.013	Friction Ridge Generalized Position		FGP	M	n/a	n/a	1	1	N
14.014	Print Position Descriptors		PPD	D	n/a	n/a	0	1	n/a
14.014_1	Print Position Descriptors	Decimal Finger Position Code	DFP	M↑	1	2	0	1	N
14.014_2	Print Position Descriptors	Finger Image Code	FIC	M↑	3	3	0	1	AN
14.015	Print Position Coordinates		PPC	D	n/a	b	0	1	n/a
14.015_0	Print Position Coordinates		PPC_0	M↑	n/a	n/a	0	12	n/a
14.015_1	Print Position Coordinates	Full Finger View	FVC	M↑	2	3	1	1	AN
14.015_2	Print Position Coordinates	Location of Segment	LOS	M↑	2	3	1	1	A
14.015_3	Print Position Coordinates	Left Horizontal Coordinate	LHC	M↑	1	5	1	1	N
14.015_4	Print Position Coordinates	Right Horizontal Coordinate	RHC	M↑	1	5	1	1	N
14.015_5	Print Position Coordinates	Top Vertical Coordinate	TVC	M↑	1	5	1	1	N
14.015_6	Print Position Coordinates	Bottom Vertical Coordinate	BVC	M↑	1	5	1	1	N
14.016	Scanned Horizontal Pixel Scale		SHPS	O	1	5	0	1	N
14.017	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
14.018	Amputated or Bandaged		AMP	O	n/a	n/a	0	1	n/a
14.018_0	Amputated or Bandaged		AMP_0	M↑	n/a	n/a	0	5	n/a
14.018_1	Amputated or Bandaged	Friction Ridge Amputation or Bandage Position	FRAP	M↑	1	2	1	1	N
14.018_2	Amputated or Bandaged	Amputated or Bandaged Code	ABC	M↑	2	2	1	1	A
14.02	Comment		COM	O	1	126	0	1	U
14.021	Finger Segment Position(s)		SEG	D	n/a	n/a	0	1	n/a
14.021_0	Finger Segment Position(s)		SEG_0	M↑	n/a	n/a	0	5	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
14.021_1	Finger Segment Position(s)	Friction Ridge Segment Position	FRSP	M↑	1	2	1	1	N
14.021_2	Finger Segment Position(s)	Left Horizontal Coordinate	LHC	M↑	1	5	1	1	N
14.021_3	Finger Segment Position(s)	Right Horizontal Coordinate	RHC	M↑	1	5	1	1	N
14.021_4	Finger Segment Position(s)	Top Vertical Coordinate	TVC	M↑	1	5	1	1	N
14.021_5	Finger Segment Position(s)	Bottom Vertical Coordinate	BVC	M↑	1	5	1	1	N
14.022	NIST Quality Metric		NQM	O	n/a	n/a	0	1	n/a
14.022_0	NIST Quality Metric		NQM_0	M↑	n/a	n/a	0	5	n/a
14.022_1	NIST Quality Metric	Friction Ridge NIST Quality Position	FRNP	M↑	1	2	1	1	N
14.022_2	NIST Quality Metric	NIST Image Quality Score	IQS	M↑	1	3	1	1	N
14.023	Segmentation Quality Metric		SQM	O	n/a	n/a	0	1	n/a
14.023_0	Segmentation Quality Metric		SQM_0	M↑	n/a	n/a	0	5	n/a
14.023_1	Segmentation Quality Metric	Friction Ridge Segment Quality Position	FRQP	M↑	1	2	1	1	N
14.023_2	Segmentation Quality Metric	Quality Value	QVU	M↑	1	3	1	1	N
14.023_3	Segmentation Quality Metric	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
14.023_4	Segmentation Quality Metric	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
14.024	Fingerprint Quality Metric		FQM	O	n/a	n/a	0	1	n/a
14.024_0	Fingerprint Quality Metric		FQM_0	M↑	n/a	n/a	0	5	n/a
14.024_1	Fingerprint Quality Metric	Friction Ridge Metric Position	FRMP	M↑	1	2	1	1	N
14.024_2	Fingerprint Quality Metric	Quality Value	QVU	M↑	1	3	1	1	N
14.024_3	Fingerprint Quality Metric	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
14.024_4	Fingerprint Quality Metric	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
14.025	Alternate Finger Segment Position		ASEG	O	n/a	n/a	0	1	n/a
14.025_0	Alternate Finger Segment Position		ASEG_0	M↑	n/a	n/a	0	5	n/a
14.025_1	Alternate Finger Segment Position	Friction Ridge Alternate Segment Position	FRAS	M↑	1	2	1	1	N
14.025_2	Alternate Finger Segment Position	Number of Points	NOP	M↑	1	2	1	1	N
14.025_3	Alternate Finger Segment Position	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
14.025_4	Alternate Finger Segment Position	Vertical Point Offset	VPO	M↑	1	5	1	1	N
14.026	Simultaneous Capture		SCF	O	1	3	0	1	N
14.027	Stitched Image Flag		SIF	D	1	1	0	1	A
14.03	Device Monitoring Mode		DMM	O	7	10	0	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
14.031	Subject Acquisition Profile - Fingerprint		FAP	O	2	2	0	1	N
14.046	Image Subject Condition		SUB	O	n/a	n/a	0	1	n/a
14.046_1	Image Subject Condition	Subject Status Code	SSC	M↑	1	1	1	1	A
14.046_2	Image Subject Condition	Subject Body Status Code	SBSC	D	1	1	0	1	N
14.046_3	Image Subject Condition	Subject Body Class Code	SBCC	D	1	1	0	1	N
14.047	Capture Organization Name		CON	O	1	1000	0	1	U
14.2	Image Source Code		ISC	O	1	1	0	1	N
14.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
14.902_0	Annotated Information		ANN_0	M↑	n/a	n/a	0	*	n/a
14.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
14.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
14.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
14.902_4	Annotated Information	Process Description	PRO	M↑	1	255	1	1	U
14.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
14.904	Make/Model/Serial Number		MMS	O	n/a	n/a	1	1	n/a
14.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
14.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
14.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
14.993	Source Agency Name		SAN	O	1	125	1	1	U
14.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
14.995_0	Associated Context		ASC_0	M↑	n/a	n/a	0	255	n/a
14.995_1	Associated Context Number		ACN	M↑	1	3	1	1	N
14.995_2	Associated Context Number	Associated Segment Position	ASP	O↑	1	2	0	1	n/a
14.996	Hash		HAS	O	64	64	0	1	H
14.997	Source Representation		SOR	O	n/a	n/a	0	1	n/a
14.997_0	Source Representation		SOR_0	M↑	n/a	n/a	0	255	n/a
14.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
14.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	N
14.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	1	1	n/a
14.998_1	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	15	15	0	1	AN

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
14.998_2	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
14.998_3	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
14.998_4	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
14.998_5	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
14.998_6	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
14.998_7	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
14.998_8	Geographic Sample Acquisition Location	Elevation	ELE	O	3	8	1	1	NS
14.998_9	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	2	6	0	1	AN
14.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	1	3	0	1	AN
14.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
14.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
14.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
14.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	1	1	U
14.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
14.999	Fingerprint Image		DATA	D	1	Unlimited	0	1	B
15.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
15.002	Information Designation Character		IDC	M	1	2	1	1	N
15.003	Impression Type		IMP	M	2	2	1	1	N
15.004	Source Agency		SRC	M	1	Unlimited	1	1	U
15.005	Palmprint Capture Date		PCD	M	Dependent on encoding	Dependent on encoding	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
15.006	Horizontal Line Length		HLL	D	2	5	0	1	N
15.007	Vertical Line Length		VLL	D	2	5	0	1	N
15.008	Scale Units		SLC	D	1	1	0	1	N
15.009	Transmitted Horizontal Pixel Scale		THPS	D	1	5	0	1	N
15.01	Transmitted Vertical Pixel Scale		TVPS	D	1	5	0	1	N
15.011	Compression Algorithm		CGA	D	3	5	0	1	AN
15.012	Bits Per Pixel		BPX	D	1	2	0	1	N
15.013	Friction Ridge Generalized Position		FGP	M	2	2	1	1	N
15.016	Scanned Horizontal Pixel Scale		SHPS	O	1	5	0	1	N
15.017	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
15.018	Amputated or Bandaged		AMP	O	n/a	n/a	0	1	n/a
15.018_0	Amputated or Bandaged	Subfields: Repeating sets of information items	AMP_0	M↑	n/a	n/a	0	9	n/a
15.018_1	Amputated or Bandaged	Friction Ridge Amputation or Bandage Position	FRAP	M↑	1	1	1	1	N
15.018_2	Amputated or Bandaged	Amputated or Bandaged Code	ABC	M↑	2	2	1	1	A
15.02	Comment		COM	O	1	126	0	1	U
15.021	Finger Segment Position		SEG	D	n/a	n/a	0	1	n/a
15.021_0	Finger Segment Position	Subfields: Repeating sets of information items	SEG_0	M↑	n/a	n/a	0	17	n/a
15.021_1	Finger Segment Position	Friction Ridge Segment Position	FRSP	M↑	1	2	1	1	N
15.021_2	Finger Segment Position	Bottom Vertical Coordinate Value	BVC	M↑	1	5	1	1	N
15.021_3	Finger Segment Position	Left Horizontal Coordinate Value	LHC	M↑	1	5	1	1	N
15.021_4	Finger Segment Position	Right Horizontal Coordinate Value	RHC	M↑	1	5	1	1	N
15.021_5	Finger Segment Position	Top Vertical Coordinate Value	TVC	M↑	1	5	1	1	N
15.023	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
15.024	Palmprint Quality Metric		PQM	M↑	n/a	n/a	0	1	n/a
15.024_0	Palmprint Quality Metric		PQM_0	M↑	n/a	n/a	0	9	N
15.024_1	Palmprint Quality Metric	Friction Ridge Metric Position	FRMP	M↑	1	2	1	1	N
15.024_2	Palmprint Quality Metric	Quality Value	QVU	M↑	1	3	1	1	N
15.024_3	Palmprint Quality Metric	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
15.024_4	Palmprint Quality Metric	Algorithm Product Identification	QAP	M↑	1	5	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
15.03	Device Monitoring Mode		DMM	O	7	10	0	1	A
15.046	Image Subject Condition		SUB	O	n/a	n/a	0	1	n/a
15.046_1	Image Subject Condition	Subject Status Code	SSC	M↑	1	1	1	1	A
15.046_2	Image Subject Condition	Subject Body Status Code	SBSC	D	1	1	0	1	N
15.046_3	Image Subject Condition	Subject Body Class Code	SBCC	D	1	1	0	1	N
15.047	Capture Organization Name		CON	O	1	1000	0	1	U
15.2	Image Source Code		ISC	O	0	2	0	*	N
15.902	Annotated Information		ANN	M↑	n/a	n/a	0	1	n/a
15.902_0	Annotated Information	Subfields: Repeating sets of information items	ANN_0	D	n/a	n/a	1	*	n/a
15.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	dependent on encoding	dependent on encoding	1	1	AN
15.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
15.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
15.902_4	Annotated Information	Process Description	PRO	M↑	1	255	0	1	U
15.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
15.904	Make/Model/Serial Number		MMS	O	1	Unlimited	1	1	n/a
15.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
15.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
15.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
15.993	Source Agency Name		SAN	O	1	125	0	1	U
15.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
15.995_0	Associated Context		ASC_0	M↑	n/a	n/a	0	255	n/a
15.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	N
15.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	N
15.996	Hash		HAS	O	64	64	0	1	H
15.997	Source Representation	Source Representation Number	SOR	O	n/a	n/a	0	1	n/a
15.997_0	Source Representation	Source Representation Number	SOR_0	M↑	n/a	n/a	0	255	n/a
15.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
15.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	N
15.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
15.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	dependent on encoding	dependent on encoding	0	1	AN
15.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	1	1	NS
15.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
15.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
15.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
15.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
15.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
15.998_08	Geographic Sample Acquisition Location	Elevation	ELE	D	1	8	0	1	NS
15.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	D	3	6	0	1	AN
15.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	2	3	0	1	AN
15.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
15.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
15.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	1	1	U
15.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	1	1	U
15.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
15.999	Palmprint Image		DATA	D	1	Unlimited	0	1	B
n/a	Capture Device Firmware Version Number (Sunset)			n/a	n/a	n/a	n/a	n/a	ANS
n/a	Capture Time (Sunset)			n/a	n/a	n/a	n/a	n/a	AN
n/a	Digitization Time (Sunset)			n/a	n/a	n/a	n/a	n/a	AN
15.201	Capture Device Global Identifier (Sunset)		DEV_GI	O	16	16	0	1	ANS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
17.001	Record Header		LEN	M	Encoding Specific	Encoding Specific	1	1	Encoding Specific
17.002	Information Designation Character		IDC	M	1	2	1	1	N
17.003	Eye Label		ELR	M	1	1	1	1	N
17.004	Source Agency		SRC	M	1	1	1	1	U
17.005	Iris Capture Date		ICD	M	Encoding Specific	Encoding Specific	1	1	Encoding Specific
17.006	Horizontal Line Length		HLL	D	2	5	0	1	N
17.007	Vertical Line Length		VLL	D	2	5	0	1	N
17.008	Scale Units		SLC	D	1	1	0	1	N
17.009	Transmitted Horizontal Pixel Scale		THPS	D	1	5	0	1	N
17.01	Transmitted Vertical Pixel Scale		TVPS	D	1	5	0	1	N
17.011	Compression Algorithm		CGA	D	3	4	0	1	AN
17.012	Bits Per Pixel		BPX	D	1	2	0	1	N
17.013	Color Space		CSP	D	3	4	0	1	A
17.014	Rotation Angle of Eye		RAE	O	1	4	0	1	H
17.015	Rotation Uncertainty		RAU	D	1	4	0	1	H
17.016	Image Property Code		IPC	O	n/a	n/a	0	1	n/a
17.016_1	Image Property Code	Horizontal Orientation	IHO	M↑	1	1	1	1	N
17.016_2	Image Property Code	Vertical Orientation	IVO	M↑	1	1	1	1	N
17.016_3	Image Property Code	Specific Scan Type	IST	M↑	1	1	1	1	N
17.017	Device Unique Identifier		DUI	O	13	16	0	1	ANS
17.019	Make/Model/Serial Number		MMS	O	n/a	n/a	1	1	n/a
17.019_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
17.019_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
17.019_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
17.02	Eye Color		ECL	O	3	3	0	1	A
17.021	Comment		COM	O	1	126	0	1	U
17.022	Scanned Horizontal Pixel Scale		SHPS	O	1	5	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
17.023	Scanned Vertical Pixel Scale		SVPS	O	1	5	0	1	N
17.024	Image Quality Score		IQS	O	n/a	n/a	0	1	n/a
17.024	Image Quality Score		IQS_0	M↑	n/a	n/a	0	9	n/a
17.024_1	Image Quality Score	Quality Value	QVU	M↑	1	3	1	1	N
17.024_2	Image Quality Score	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
17.024_3	Image Quality Score	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
17.025	Effective Acquisition Spectrum		EAS	O	3	9	0	1	A
17.026	Iris Diameter		IRD	O	2	4	0	1	N
17.027	Specified Spectrum Value		SSV	D	n/a	n/a	0	1	n/a
17.027_1	Specified Spectrum Value	Spectrum Lower Bound	LOW	M↑	3	4	1	1	N
17.027_2	Specified Spectrum Value	Spectrum Upper Bound	HIG	M↑	3	4	1	1	N
17.028	Damaged or Missing Eye		DME	O	2	2	0	1	A
17.03	Device Monitoring Mode		DMM	O	7	10	0	1	A
17.031	Subject Acquisition Profile - IRIS		IAP	O	2	2	0	1	N
17.032	Iris Storage Format		ISF	O	1	1	0	1	N
17.033	Iris Pupil Boundary		IPB	O	n/a	n/a	0	1	n/a
17.033_1	Boundary Code		BYC	M↑	1	1	1	1	A
17.033_2	Iris Pupil Boundary	Number of Points	NOP	M↑	1	2	1	1	N
17.033_3	Iris Pupil Boundary	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
17.033_4	Iris Pupil Boundary	Vertical Point Offset	VPO	M↑	1	5	0	1	N
17.034	Iris Sclera Boundary		ISB	O	n/a	n/a	0	1	n/a
17.034_1	Iris Sclera Boundary	Boundary Code	BYC	M↑	1	1	1	1	A
17.034_2	Iris Sclera Boundary	Number of Points	NOP	M↑	1	2	1	1	N
17.034_3	Iris Sclera Boundary	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
17.034_4	Iris Sclera Boundary	Vertical Point Offset	VPO	M↑	1	5	1	1	N
17.035	Upper Eyelid Boundary		UEB	O	n/a	n/a	0	1	n/a
17.035_1	Upper Eyelid Boundary	Boundary Code	BYC	M↑	1	1	1	1	A
17.035_2	Upper Eyelid Boundary	Number of Points	NOP	M↑	1	2	1	1	N
17.035_3	Upper Eyelid Boundary	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
17.035_4	Upper Eyelid Boundary	Vertical Point Offset	VPO	M↑	1	5	1	1	N
17.036	Lower Eyelid Boundary		LEB	O	n/a	n/a	0	1	n/a
17.036_1	Lower Eyelid Boundary	Boundary Code	BYC	M↑	1	1	1	1	A

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
17.036_2	Lower Eyelid Boundary	Number of Points	NOP	M↑	1	2	1	1	N
17.036_3	Lower Eyelid Boundary	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
17.036_4	Lower Eyelid Boundary	Vertical Point Offset	VPO	M↑	1	5	1	1	N
17.037	Make/Model/Serial Number	Non-eyelid Occlusions	NEO	O	n/a	n/a	0	1	n/a
17.037_0	Make/Model/Serial Number	Subfields: Repeating sets of information items information items	NEO_0	M↑	n/a	n/a	1	*	n/a
17.037_1	Non-eyelid Occlusions	Occlusion Opacity	OCY	M↑	1	1	1	1	A
17.037_2	Non-eyelid Occlusions	Occlusion Type	OCT	M↑	1	1	1	1	A
17.037_3	Non-eyelid Occlusions	Number of Points	NOP	M↑	1	2	1	1	N
17.037_4	Non-eyelid Occlusions	Horizontal Point Offset	HPO	M↑	1	5	1	1	N
17.037_5	Non-eyelid Occlusions	Vertical Point Offset	VPO	M↑	1	5	1	1	N
17.04	Range		RAN	O	1	7	0	1	N
17.041	Frontal Gaze		GAZ	O	1	2	0	1	N
17.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
17.902_0	Annotated Information	Subfields: Repeating sets of information items	ANN_0	M↑	n/a	n/a	1	*	n/a
17.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	dependent on encoding	dependent on encoding	1	1	AN
17.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
17.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
17.902_4	Annotated Information	Process Description	PRO	M↑	1	255	1	1	U
17.993	Source Agency Name		SAN	O	1	125	0	1	U
17.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
17.995_0	Associated Context	Subfields: Repeating sets of information items	ASC_0	M↑	n/a	n/a	0	255	n/a
17.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	N
17.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	N
17.996	Hash		HAS	O	64	64	0	1	H
17.997	Source Representation		SOR	O	n/a	n/a	0	1	n/a
17.997_0	Source Representation	Subfields: Repeating sets of information items	SOR_0	M↑	n/a	n/a	0	255	n/a

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
17.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
17.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	N
17.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
17.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	dependent on encoding	dependent on encoding	0	1	AN
17.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	1	1	NS
17.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
17.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
17.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	1	1	NS
17.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
17.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
17.998_08	Geographic Sample Acquisition Location	Elevation	ELE	D	1	8	0	1	NS
17.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	D	3	6	0	1	AN
17.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	2	3	0	1	AN
17.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	1	1	N
17.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	1	1	N
17.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
17.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	1	1	U
17.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	1	1	U
17.999	Iris Image Data		DATA	D	1	Unlimited	0	1	B
n/a	Capture Time			n/a	n/a	n/a	n/a	n/a	AN

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
n/a	Digitization Time			n/a	n/a	n/a	n/a	n/a	AN
17.018	Global Unique Identifier		GUI	n/a	n/a	n/a	n/a	n/a	AN
18.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
18.002	Information Designation Character		IDC	M	1	2	1	1	N
18.003	DNA Laboratory Setting		DLS	M	n/a	n/a	1	1	n/a
18.003_1	DNA Laboratory Setting	Unit Type	UTY	M	1	1	0	1	N
18.003_2	DNA Laboratory Setting	Lab Type	LTY	D	1	1	0	1	A
18.003_3	DNA Laboratory Setting	Accreditation Information	ACC	D	1	35	0	4	ANS
18.003_4	DNA Laboratory Setting	Name of the Organization	NOO	O	1	Unlimited	0	1	U
18.003_5	DNA Laboratory Setting	Point of Contact	POC	O	1	200	0	1	U
18.003_6	DNA Laboratory Setting	Code of Sending Country	CSC	O	2	4	0	1	AN
18.003_7	DNA Laboratory Setting	International Organization Name	ION	O	1	100	0	1	U
18.004	Source Agency		SRC	M	1	Unlimited	1	1	U
18.005	Number of Analysis Flag		NAL	M	1	1	1	1	N
18.006	Sample Donor Information		SDI	M	n/a	n/a	1	1	n/a
18.006_1	Sample Donor Information	DNA Sample Donor	DSD	M	1	1	1	1	N
18.006_2	Sample Donor Information	Gender ID	GID	O	1	1	0	1	A
18.006_3	Sample Donor Information	Date of Last Contact	DLC	O	8	8	0	1	N
18.006_4	Sample Donor Information	Donor Date of Birth	DOB	O	8	8	0	1	N
18.006_5	Sample Donor Information	Ethnic Group	EGP	O	1	50	0	1	U
18.006_6	Sample Donor Information	Dental Records Available	DRA	D	1	1	0	1	N
18.006_7	Sample Donor Information	Sample Collection Location Description	LLC	O	1	4000	0	1	U
18.006_8	Sample Donor Information	Sample Donor Status	SDS	O	1	1	0	1	N
18.007	Claimed Or Purported Relationship		COPR	D	1	1	0	1	U
18.008	Validated Relationship		VRS	D	1	1	0	1	N
18.009	Pedigree Information		PED	O	n/a	n/a	0	1	n/a
18.009_1	Pedigree Information	Pedigree ID	PID	M↑	1	24	1	1	U
18.009_2	Pedigree Information	Pedigree Member ID	PMI	M↑	1	6	1	1	U
18.009_3	Pedigree Information	Pedigree Member Status	PMS	M↑	1	1	1	1	A
18.009_4	Pedigree Information	Sample Identifier	SID	M↑	1	24	1	1	AN
18.009_5	Pedigree Information	Father Identifier	FID	O↑	1	3	0	1	N
18.009_6	Pedigree Information	Mother Identifier	MID	O↑	1	3	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
18.009_7	Pedigree Information	Pedigree Comment	PCM	O↑	1	2000	0	1	U
18.01	Sample Type		STY	M	n/a	n/a	1	1	n/a
18.010_1	Sample Type	Sample Cellular Type	SCT	M	1	2	1	1	N
18.010_2	Sample Type	Sample Origin	SMO	O	2	2	0	1	A
18.011	Sample Typing Information		STI	M	n/a	n/a	1	1	N
18.011_0	Sample Typing Information		STI_0	M	1	1	1	5	N
18.012	Sample Collection Method		SCM	O	1	255	0	1	U
18.013	Sample Collection Date		SCD	M	15	15	1	1	N
18.014	Profile Storage Date		PSD	M	15	15	1	1	N
18.015	DNA Profile Data		DPD	M	n/a	n/a	1	1	n/a
18.015_1	DNA Profile Data	Profile Type	PTP	M	1	1	1	1	N
18.015_2	DNA Profile Data	Result	RES	O	1	2	0	1	N
18.015_3	DNA Profile Data	Profile ID	PRF	M	1	64	1	1	U
18.015_4	DNA Profile Data	Supplemental Message	SUP	O	1	100	0	1	U
18.015_5	DNA Profile Data	DNA Profile Comment	DPC	O	1	100	0	1	U
18.016	Autosomal STR, X-STR and Y-STR Profile		STR	D	n/a	n/a	0	1	n/a
18.016_0	Autosomal STR, X-STR and Y-STR Profile		STR_0	M↑	n/a	n/a	0	*	n/a
18.016_1	Autosomal STR, X-STR and Y-STR Profile	DNA STR Type	DST	M↑	1	1	1	1	N
18.016_2	Autosomal STR, X-STR and Y-STR Profile	DNA Locus Reference	DLR	M↑	1	3	1	1	N
18.016_3	Autosomal STR, X-STR and Y-STR Profile	Allele Indicator	ALL	M↑	1	1	1	1	N
18.016_4	Autosomal STR, X-STR and Y-STR Profile	Locus Analysis Indicator	LAI	M↑	1	1	1	1	N
18.016_5	Autosomal STR, X-STR and Y-STR Profile	Precise Call Determination	PCDT	M↑	1	1	1	1	N
18.016_6	Autosomal STR, X-STR and Y-STR Profile	Allele Call 1	AL1	D	1	4	0	1	NS
18.016_7	Autosomal STR, X-STR and Y-STR Profile	Allele Call 2	AL2	D	1	4	0	1	NS
18.016_8	Autosomal STR, X-STR and Y-STR Profile	Allele Call 3	AL3	D	1	4	0	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
18.016_9	Autosomal STR, X-STR and Y-STR Profile	Batch ID	BID	O↑	1	32	0	1	U
18.016_10	Autosomal STR, X-STR and Y-STR Profile	Electropherogram Cross Reference	ECR	O↑	1	8	0	1	U
18.016_11	Autosomal STR, X-STR and Y-STR Profile	Ladder Cross Reference	LCR	O↑	1	8	0	1	U
18.016_12	Autosomal STR, X-STR and Y-STR Profile	Kit ID	KID	M↑	1	3	0	1	N
18.016_13	Autosomal STR, X-STR and Y-STR Profile	Kit Name	KNM	D	1	32	0	1	U
18.016_14	Autosomal STR, X-STR and Y-STR Profile	Manufacturer	KMF	D	1	32	0	1	U
18.016_15	Autosomal STR, X-STR and Y-STR Profile	Description of the Kit (with part or catalog number)	KDS	D	1	128	0	1	U
18.017	Mitochondrial DNA Data		DMD	D	n/a	n/a	0	1	n/a
18.017_1	Mitochondrial DNA Data	Mito Control Region 1	MT1	M↑	1	946	1	1	AS
18.017_2	Mitochondrial DNA Data	Mito Control Region 2	MT2	M↑	1	977	1	1	AS
18.017_3	Mitochondrial DNA Data	Base Composition Starting Point	BSP	M↑	1	5	1	1	N
18.017_4	Mitochondrial DNA Data	Base Composition Ending Point	BEP	M↑	1	5	1	1	N
18.017_5	Mitochondrial DNA Data	Base Composition A Length	BCA	M↑	1	2	1	1	N
18.017_6	Mitochondrial DNA Data	Base Composition G Length	BCG	M↑	1	2	1	1	N
18.017_7	Mitochondrial DNA Data	Base Composition C Length	BCC	M↑	1	2	1	1	N
18.017_8	Mitochondrial DNA Data	Base Composition T Length	BCT	M↑	1	2	1	1	N
18.018	DNA User-Defined Profile		UDP	D	n/a	n/a	1	1	n/a
18.018_0	DNA User-Defined Profile		UDP_0	M↑	n/a	n/a	1	*	n/a
18.019	Electropherogram Description		EPD	D	n/a	n/a	1	1	n/a
18.019_0	Electropherogram Description		EPD_0	M↑	n/a	n/a	1	*	n/a
18.019_1	Electropherogram Description	Electropherogram Image Reference	EIR	M↑	1	8	1	1	U
18.019_2	Electropherogram Description	Electropherogram Storage Type	EST	M↑	1	4	1	1	U
18.019_3	Electropherogram Description	Image Data Descriptor	IDD	M↑	1	200	1	1	U
18.019_4	Electropherogram Description	Electropherogram Data	ELPD	M↑	2	Unlimited	1	1	Base64
18.019_5	Electropherogram Description	Electropherogram Screenshot	EPS	O↑	2	Unlimited	1	1	Base64

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
18.02	DNA Genotype Distribution		DGD	O	1	1	0	1	N
18.021	DNA Genotype Allele Pair		GAP	D	n/a	n/a	0	1	n/a
18.021_0	DNA Genotype Allele Pair		GAP_0	M↑	n/a	n/a	1	*	n/a
18.021_1	DNA Genotype Allele Pair	Genotype Locus Reference	GLR	M↑	1	3	1	1	N
18.021_2	DNA Genotype Allele Pair	Allele Pair	ALP	M↑	3	9	1	1	NS
18.021_3	DNA Genotype Allele Pair	Genotype Numerical Weight	GNW	M↑	1	5	1	1	NS
18.022	Comment		COM	O	1	126	0	1	U
18.023	Electropherogram Ladder		EPL	D	n/a	n/a	0	1	n/a
18.023_0	Electropherogram Ladder		EPL_0	M↑	n/a	n/a	1	*	n/a
18.023_1	Electropherogram Ladder	Ladder Image Reference	LIR	M↑	1	8	1	1	U
18.023_2	Electropherogram Ladder	Ladder Storage Type	LST	M↑	1	4	1	1	U
18.023_3	Electropherogram Ladder	Ladder Image Data Descriptor	LDD	M↑	1	200	1	1	U
18.023_4	Electropherogram Ladder	Ladder Electropherogram Data	LEPD	M↑	2	Unlimited	1	1	Base64
18.023_5	Electropherogram Ladder	Ladder Electropherogram Screenshot	LES	O↑	2	Unlimited	1	1	Base64
18.902	Annotation Information		ANN	O	n/a	n/a	0	1	n/a
18.902_0	Annotation Information	Subfields: Repeating sets of information items	ANN_0	M↑	n/a	n/a	1	*	n/a
18.902_1	Annotation Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
18.902_2	Annotation Information	Processing Algorithm Name / Version	NAV	M↑	1	*	1	1	U
18.902_3	Annotation Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
18.902_4	Annotation Information	Process Description	PRO	M↑	1	255	1	1	U
18.992	Type-2 Record Cross Reference		T2C	M	1	2	1	1	N
18.993	Source Agency Name		SAN	O	1	125	0	1	U
18.995	Annotated Information		ASC	O	n/a	n/a	0	1	n/a
18.995_0	Annotated Information		ASC_0	M↑	n/a	n/a	1	255	n/a
18.995_1	Associated Context Number		ACN	M↑	1	3	1	1	n/a
18.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	n/a
18.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
18.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	15	15	0	1	AN

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
18.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
18.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
18.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
18.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
18.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
18.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
18.998_08	Geographic Sample Acquisition Location	Elevation	ELE	O	3	8	0	1	NS
18.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	2	6	0	1	AN
18.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	1	3	0	1	AN
18.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
18.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
18.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
18.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	0	1	U
18.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
20.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
20.002	Information Designation Character		IDC	M	1	2	1	1	N
20.003	SRN Cardinality		CAR	M	1	1	1	1	A
20.004	Source Agency		SRC	M	1	Unlimited	1	1	U
20.005	Source Representation Date		SRD	O	Dependent upon encoding	Dependent upon encoding	0	1	N
20.006	Hash	Horizontal Line Length	HLL	D	2	5	1	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
20.007	Vertical Line Length		VLL	D	2	5	1	1	N
20.008	Scale Units		SLC	D	1	1	0	1	N
20.009	Transmitted Horizontal Pixel Scale		THPS	D	1	5	0	1	N
20.01	Transmitted Vertical Pixel Scale		TVPS	D	1	5	0	1	N
20.011	Compression Algorithm		CGA	D	3	5	0	1	AN
20.012	Bits Per Pixel		BPX	D	1	2	0	1	N
20.013	Color Space		CSP	D	3	4	0	1	A
20.014	Acquisition Source		AQS	M	n/a	n/a	0	1	n/a
20.014_0	Acquisition Source	Subfields: Repeating sets of information items	AQS_0	M	n/a	n/a	1	9	n/a
20.014_1	Acquisition Source	Acquisition Source Type	AQT	M	1	2	1	1	N
20.014_2	Acquisition Source	Analog to Digital Conversion	A2D	D	1	200	0	1	U
20.014_3	Acquisition Source	Radio Transmission Format Description	FDN	D	1	200	0	1	U
20.014_4	Acquisition Source	Acquisition Special Characteristics	AQSC	D	1	200	0	1	U
20.015	Source Representation Format		SFT	M	n/a	n/a	1	1	n/a
20.015_1	Source Representation Format	File Type	FTY	M	3	6	1	1	U
20.015_2	Source Representation Format	Decoding Instructions	DEI	O	1	1000	0	1	U
20.016	Segments		SEG	O	n/a	n/a	0	1	n/a
20.016_0	Segments	Subfields: Repeating sets of information items	SEG_0	M↑	n/a	n/a	0	99	n/a
20.016_1	Segments	Reference Segment Position	RSP	M↑	1	2	1	1	N
20.016_2	Segments	Internal File Reference Pointer	IPT	M↑	1	15	1	1	ANS
20.016_3	Segments	Number of Points	NOP	D	1	2	0	1	N
20.016_4	Segments	Horizontal Point Offset	HPO	D	1	5	1	1	N
20.016_5	Segments	Vertical Point Offset	VPO	D	1	5	1	1	N
20.017	Scanned Horizontal Pixel Scale		SHPS	D	1	5	0	1	N
20.018	Scanned Vertical Pixel Scale		SVPS	D	1	5	0	1	N
20.019	Time Index		TIX	D	n/a	n/a	0	1	n/a
20.019_0	Time Index	Subfields: Repeating sets of information items	TIX_0	M↑	n/a	n/a	0	99	n/a
20.019_1	Time Index	Time Index Start	TIS	M↑	12	12	1	1	NS
20.019_2	Time Index	Time Index End	TIE	M↑	12	12	1	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
20.02	Comment		COM	O	1	126	0	1	U
20.021	Source Representation Number		SRN	M	1	3	1	1	N
20.022	Imagery Capture Date Range Estimate		ICDR	D	3	9	0	1	AN
20.101	Voice Engine Mode Export		MODEL_EXPORT	O	n/a	n/a	0	1	U
20.101_1	Voice Engine Mode Export	Model Identifier	MODEL_EXPORT_1	O	1	50	0	1	U
20.101_2	Voice Engine Mode Export	Model Export Software Version	MODEL_EXPORT_2	O	1	50	0	1	U
20.101_3	Voice Engine Mode Export	Model Export Software Name	MODEL_EXPORT_3	O	1	50	0	1	U
20.101_4	Voice Engine Mode Export	Model Export Associated Type 2 Reference	MODEL_EXPORT_4	O	1	6	0	1	U
20.101_5	Voice Engine Mode Export	Model Export Comment	MODEL_EXPORT_5	O	1	255	0	1	U
20.101_6	Voice Engine Mode Export	Model Export Software Vendor	MODEL_EXPORT_6	O	1	50	0	1	U
20.902	Annotated Information		ANN	M↑	n/a	n/a	0	1	n/a
20.902_0	Annotated Information	Subfields: Repeating sets of information items	ANN_0	D	n/a	n/a	1	*	n/a
20.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	dependent on encoding	dependent on encoding	1	1	AN
20.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
20.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
20.902_4	Annotated Information	Process Description	PRO	M↑	1	Unlimited	1	1	U
20.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS
20.904	Make/Model/Serial Number		MMS	O	n/a	n/a	1	1	n/a
20.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
20.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
20.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
20.993	Source Agency Name		SAN	O	1	125	0	1	U
20.994	External File Reference		EFR	D	1	200	0	1	U
20.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
20.995_0	Associated Context	Subfields: Repeating sets of information items	ASC_0	M↑	n/a	n/a	0	255	n/a
20.995_1	Associated Context	Associated Context Number	ACN	M↑	1	3	1	1	N
20.995_2	Associated Context	Associated Segment Position	ASP	O↑	1	2	0	1	N
20.996	Hash		HAS	O	64	64	0	1	H
20.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	1	1	n/a
20.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	dependent upon encoding	dependent upon encoding	0	1	AN
20.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
20.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
20.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	NS
20.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
20.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
20.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	NS
20.998_08	Geographic Sample Acquisition Location	Elevation	ELE	O	1	8	1	1	NS
20.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	3	6	0	1	AN
20.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	2	3	0	1	AN
20.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
20.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
20.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
20.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	0	1	U
20.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	1	1	U
20.999	Source Representation Data		DATA	D	1	Unlimited	0	1	B
21.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
21.002	Information Designation Character		IDC	M	1	2	1	1	N
21.004	Source Agency		SRC	M	1	Unlimited	1	1	U
21.005	Associated Context Date		ACD	O	12	12	0	1	N
21.006	Medical Device Information		MDI	O	n/a	n/a	0	1	n/a
21.006_0	Medical Device Information	Repeating Subfields	MDI_0	M↑	n/a	n/a	1	*	n/a
21.006_1	Medical Device Information	Type of Device	TYP	O↑	1	500	0	1	U
21.006_2	Medical Device Information	Device Manufacturer	MFG	O↑	1	500	0	1	U
21.006_3	Medical Device Information	Device Make	MAK	O↑	1	500	0	1	U
21.006_4	Medical Device Information	Device Model	MOD	O↑	1	500	0	1	U
21.006_5	Medical Device Information	Device Serial Number	SER	O↑	1	500	0	1	U
21.006_6	Medical Device Information	Comments	COM	O↑	1	Unlimited	0	1	U
21.015	Associated Context Format		AFT	M	n/a	n/a	1	1	n/a
21.015_1	Associated Context Format	File Type	FTY	M	3	6	1	1	U
21.015_2	Associated Context Format	Decoding Instructions	DEI	O	1	1000	0	1	U
21.016	Segments		SEG	O	n/a	n/a	0	1	n/a
21.016_0	Segments	Repeating Subfields	SEG_0	M↑	n/a	n/a	0	99	n/a
21.016_1	Segments	Associated Segment Position	ASP	M↑	1	2	1	1	n/a
21.016_2	Segments	Internal File Reference Pointer	IPT	M↑	1	15	1	1	ANS
21.016_3	Segments	Number of Points	NOP	O↑	1	2	0	99	N
21.016_4	Segments	Horizontal Point Offset	HPO	D	1	5	1	1	N
21.016_5	Segments	Vertical Point Offset	VPO	D	1	5	1	1	N
21.019	Time Index		TIX	D	n/a	n/a	0	1	n/a
21.019_0	Time Index	Repeating Subfields	TIX_0	M↑	n/a	n/a	0	99	n/a
21.019_1	Time Index	Time Index Start	TIS	M↑	12	12	1	1	NS
21.019_2	Time Index	Time Index End	TIE	M↑	12	12	1	1	NS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
21.02	Comment		COM	O	1	126	0	1	U
21.021	Associated Context Number		ACN	M	1	3	1	1	N
21.022	Image Capture Date Range Estimate		ICDR	D	3	9	0	1	AN
21.046	Image Subject Condition		SUB	O	n/a	n/a	1	1	n/a
21.046_1	Image Subject Condition	Subject Status Code	SSC	M↑	1	1	1	1	A
21.046_2	Image Subject Condition	Subject Body Status Code	SBSC	D	1	1	1	1	N
21.046_3	Image Subject Condition	Subject Body Class Code	SBCC	D	1	1	0	1	N
21.047	Capture Organization Name		CON	O	1	1000	0	1	U
21.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
21.902_0	Annotated Information	Repeating Subfields	ANN_0	M↑	n/a	n/a	1	*	n/a
21.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
21.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
21.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
21.902_4	Annotated Information	Process Description	PRO	M↑	1	255	1	1	U
21.993	Source Agency Name		SAN	O	1	125	0	1	U
21.994	External File Reference		EFR	D	1	200	0	1	U
21.996	Hash		HAS	O	64	64	0	1	H
21.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
21.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	15	15	0	1	AN
21.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	0	1	NS
21.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
21.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
21.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	0	1	NS
21.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
21.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
21.998_08	Geographic Sample Acquisition Location	Elevation	ELE	O	3	8	0	1	NS
21.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	2	6	0	1	AN
21.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	1	3	0	1	AN
21.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
21.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
21.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	1	U
21.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	0	1	U
21.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	1	1	U
21.999	Associated Context Data		DATA	D	1	Unlimited	0	1	B
98.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
98.002	Information Designation Character		IDC	M	1	2	1	1	N
98.003	IA Data Format Owner		DFO	M	4	4	1	1	H
98.004	Source Agency		SRC	M	1	Unlimited	1	1	U
98.005	IA Data Format Type		DFT	M	1	20	1	1	U
98.006	IA Data Creation Date		DCD	M	Dependent on Encoding	Dependent on Encoding	1	1	N
98.9	Audit Log		ALF	O	n/a	n/a	0	1	n/a
98.900_0	Audit Log	Subfields: Repeating sets of information items	ALF_0	M↑	n/a	n/a	0	*	n/a
98.900_1	Audit Log	Event	EVT	M↑	5	9	1	1	N
98.900_2	Audit Log	Event Reason	EVR	O↑	1	200	0	1	U
98.900_3	Audit Log	Information Identifier	IID	M↑	15	30	1	1	H
98.900_4	Audit Log	Agent	AGT	M↑	1	200	1	1	U

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
98.900_5	Audit Log	Old Reference	OLD	O↑	Dependent upon the format of the location referenced by 98.900_3 Information Identifier (IID)	Dependent upon the format of the location referenced by 98.900_3 Information Identifier (IID)	0	1	U
98.901	Audit Log	Audit Revision Number	ARN	D	1	3	0	1	N
98.993	Source Agency Name		SAN	O	1	125	0	1	U
99.001	Record Header		LEN	M	T = 4; X = 1	T = 8; X = 2	1	1	N
99.002	Information Designation Character		IDC	M	1	2	1	1	N
99.004	Source Agency		SRC	M	1	Unlimited	1	1	U
99.005	Biometric Capture Date		BCD	M	1	Unlimited	1	1	N
99.1	CBEFF Header Version		HDV	M	T = 4, X = 3	4	1	1	N
99.101	Biometric Type		BTY	M	T = 4, X = 3	8	1	1	H
99.102	Biometric Data Quality		BDQ	O	n/a	n/a	0	1	n/a
99.102_0	Biometric Data Quality		BDQ_0	M↑	n/a	n/a	0	9	n/a
99.102_1	Biometric Data Quality	Quality Value	QVU	M↑	1	3	1	1	N
99.102_2	Biometric Data Quality	Algorithm Vendor Identification	QAV	M↑	4	4	1	1	H
99.102_3	Biometric Data Quality	Algorithm Product Identification	QAP	M↑	1	5	1	1	N
99.103	BDB Format Owner		BFO	M	4	4	1	1	H
99.104	BDB Format Type		BFT	M	4	4	1	1	H
99.902	Annotated Information		ANN	O	n/a	n/a	0	1	n/a
99.902_0	Annotated Information	Repeating subsets	ANN_0	M↑	n/a	n/a	1	*	n/a
99.902_1	Annotated Information	Greenwich Mean Time	GMT	M↑	15	15	1	1	AN
99.902_2	Annotated Information	Processing Algorithm Name / Version	NAV	M↑	1	Unlimited	1	1	U
99.902_3	Annotated Information	Algorithm Owner	OWN	M↑	1	64	1	1	U
99.902_4	Annotated Information	Process Description	PRO	M↑	1	255	1	1	U
99.903	Device Unique Identifier		DUI	O	13	16	0	1	ANS

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
99.904	Make/Model/Serial Number		MMS	O	n/a	n/a	1	1	n/a
99.904_1	Make/Model/Serial Number	Make	MAK	M↑	1	50	0	1	U
99.904_2	Make/Model/Serial Number	Model	MOD	M↑	1	50	0	1	U
99.904_3	Make/Model/Serial Number	Serial Number	SER	M↑	1	50	0	1	U
99.993	Source Agency Name		SAN	O	1	125	0	1	U
99.995	Associated Context		ASC	O	n/a	n/a	0	1	n/a
99.995_0	Associated Context	Repeating subsets	ASC_0	M↑	n/a	n/a	0	255	n/a
99.995_1	Associated Context Number		ACN	M↑	n/a	n/a	1	1	n/a
99.995_2	Associated Segment Position		ASP	M↑	1	3	0	1	N
99.996	Hash		HAS	O↑	1	2	0	1	n/a
99.997	Source Representation		SOR	O	n/a	n/a	0	1	n/a
99.997_0	Source Representation	Repeating subsets	SOR_0	M↑	n/a	n/a	0	255	n/a
99.997_1	Source Representation	Source Representation Number	SRN	M↑	1	3	1	1	N
99.997_2	Source Representation	Reference Segment Position	RSP	O↑	1	2	0	1	N
99.998	Geographic Sample Acquisition Location		GEO	O	n/a	n/a	0	1	n/a
99.998_01	Geographic Sample Acquisition Location	Universal Time Entry	UTE	O↑	15	15	0	1	AN
99.998_02	Geographic Sample Acquisition Location	Latitude Degree Value	LTD	D	1	9	1	1	NS
99.998_03	Geographic Sample Acquisition Location	Latitude Minute Value	LTM	D	1	8	0	1	NS
99.998_04	Geographic Sample Acquisition Location	Latitude Second Value	LTS	D	1	8	0	1	N
99.998_05	Geographic Sample Acquisition Location	Longitude Degree Value	LGD	D	1	10	1	1	NS
99.998_06	Geographic Sample Acquisition Location	Longitude Minute Value	LGM	D	1	8	0	1	NS
99.998_07	Geographic Sample Acquisition Location	Longitude Second Value	LGS	D	1	8	0	1	N
99.998_08	Geographic Sample Acquisition Location	Elevation	ELE	O	3	8	0	1	NS
99.998_09	Geographic Sample Acquisition Location	Geodetic Datum Code	GDC	O	2	6	0	1	AN
99.998_10	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Zone	GCM	D	1	3	0	1	AN

Field .	Category	SubCategory	Mnemonic	Cond.	Field Min	Field Max	Occur Min	Occur Max	Char Types
99.998_11	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Easting	GCE	D	1	6	0	1	N
99.998_12	Geographic Sample Acquisition Location	Geographic Coordinate Universal Transverse Mercator Northing	GCN	D	1	8	0	1	N
99.998_13	Geographic Sample Acquisition Location	Geographic Reference Text	GRT	O	1	150	0	*	U
99.998_14	Geographic Sample Acquisition Location	Geographic Coordinate Other System Identifier	OSI	O	1	10	1	1	U
99.998_15	Geographic Sample Acquisition Location	Geographic Coordinate Other System Value	OCV	D	1	126	0	1	U
99.999	Biometric Data Block		DATA	D	1	Unlimited	1	1	B

Abbreviations and Acronyms

TERM	DEFINITION
ANSI	American National Standards Institute
ASN.1	Abstract Syntax Notation One
BIMA	Biometrics Identity Management Agency
CJIS	Criminal Justice Information Services
DoD	Department of Defense
DOJ	Department of Justice
EBTS	Electronic Biometric Transmission Specification
FBI	Federal Bureau of Investigation
HSPD	Homeland Security Presidential Directive
IDD	Integrated Data Dictionary
IEP	Information Exchange Package
IEPD	Information Exchange Package Documentation
ITL	Information Technology Laboratory
MIME	Multipart Internet Mail Extension
N-DEx	National Law Enforcement Data Exchange
NIEM	National Information Exchange Model
NIST	National Institute of Standards and Technology
TWPDES	Terrorist Watchlist Person Data Exchange Standard
U.S.	United States
XML	Extensible Markup Language
XOP	XML-binary Optimized Packaging

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