



**Department of Justice  
Federal Bureau of Investigation**

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**CRIMINAL JUSTICE INFORMATION SERVICES (CJIS)**

**ELECTRONIC BIOMETRIC TRANSMISSION  
SPECIFICATION (EBTS)**

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## PREFACE

### How to Use This Document

This section briefly describes the parts of this document and shows how the user can utilize the document in an efficient manner.

- Section 1: Introduction. This section explains why this document was created, brief descriptions of the specification, and the elements that are commonly used.
- Section 2: Scope. This section explains the scope of this document and its purpose.
- Section 3: Services and Transaction Types. This section describes the User Services being offered by Next Generation Identification (NGI).
- Appendix A: Transaction Response Times. This appendix briefly presents priorities for each transaction type and response times for the transaction described in this document.
- Appendix B: Descriptors And Field Edit Specifications For Type-1 Logical Records. This appendix describes the field list for Type-1 records (Header Information).
- Appendix C: Descriptors And Field Edit Specifications For Type-2 Logical Records. This appendix contains the definitions of fields used for the Type-2 records (Transaction Descriptive, Demographic, and Biographic Information).
- Appendix D: Summary Logical Record Layouts For Type-2 Identification And Verification Transactions. This appendix contains a summary of Type-2 fields for the Identification and Verification User Services transactions.
- Appendix E: Summary Logical Record Layouts For Type-2 Investigation, Information, and Notification Transactions. This appendix contains the summary of Type-2 fields for the Investigation, Information, and Notification User Services transactions.
- Appendix F: FBI/CJIS Image Quality Specifications. This appendix gives the Integrated Automated Fingerprint Identification System (IAFIS) Image Quality Specifications for fingerprint scanners, both for traditional rolled prints and “Identification Flats,” printers, and Fast Track Certification procedures.
- Appendix G: Reserved. This appendix is currently Reserved for Future Use.
- Appendix H: Descriptors And Field Edit Specifications For Type-7 Logical Records. This appendix presents the Type-7 (Tenprint Fingerprint Card Images) logical record field list, including descriptors and edit specifications.
- Appendix I: Summary Logical Record Layouts For Type-2 Data Management Transactions. This appendix presents a summary of Type-2 record layouts for Data Management User Services transactions.
- Appendix J: Descriptors And Field Edit Specifications For Type-9 Logical Records. This appendix gives the Type-9 (Fingerprint Minutiae Information) logical record field list, including descriptors and edit specifications.
- Appendix K: Descriptors And Field Edit Specifications For Type-10 Logical Records. This appendix details the Type-10 (Photo Images) logical record field list and the Type-2 (Photo) transaction field lists. Appendix K also gives considerable detail concerning photos and Type-2 descriptor information for Scars, Marks, and Tattoos.
- Appendix L: Summary Tables. This appendix provides a complete cross-reference of elements and their tag numbers and lists logical record requirements for each transaction type.
- Appendix M: Transaction Error Messages. This appendix contains error message details.
- Appendix N: Field Edit Specifications For Type-14 Logical Records. This appendix provides definition descriptors and field edits of Type-14 Variable Resolution Fingerprint Image Record.
- Appendix O: POB Code Table. This appendix contains codes applicable to place of birth and citizenship, and displays allowable codes for each.
- Appendix P: Specifications For Transmitting Palm Prints And Supplemental Fingerprints. This appendix contains the recommendations for submission of palm prints along with supplemental fingerprint and palm print images.

- Appendix Q: Descriptors And Field Edit Specifications For Type-15 Logical Records. This appendix contains the detail of the Type-15, Palm Print, record type elements.
- Appendix R: Descriptors And Field Edit Specifications For Type-13 Logical Records. This appendix contains the detail of the Type-13, Friction Ridge, record type elements.
- Appendix AC: Acronyms.

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# 1 INTRODUCTION

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## 1.1 Background

In accordance with the recommendations of the FBI/CJIS Advisory Policy Board (APB) Identification Services Subcommittee, the FBI has developed this standard for electronically encoding and transmitting biometric image, identification, and arrest data that extends the American National Standards Institute/National Institute of Standards and Technology - Information Technology Laboratory (ANSI/NIST-ITL) standard. ANSI/NIST-ITL is developed and maintained in conjunction with the National Institute of Standards and Technology (NIST) and the biometric identification community.

While the aforementioned ANSI/NIST-ITL standard provides the guidelines for the exchange of biometric information between various federal, state, local, tribal, and international systems, the FBI's EBTS defines requirements to which agencies must adhere when electronically communicating with the FBI. The FBI's EBTS and its future revisions will inherit the basic requirements for logical records set forth in the ANSI/NIST-ITL standard. However, the FBI/CJIS-specific requirements for the contents and composition of logical records Type-1 (Header Information), Type-2 (Transaction Descriptive, Demographic and Biographic Information), Type-4 (Fingerprint Image Descriptive Information), Type-7 (Tenprint Fingerprint Card Images), Type-9 (Fingerprint Minutiae Information), Type-10 (Photo Images), Type-13 (Latent Friction Ridge Images), Type-14 (Variable Resolution Fingerprint Images), Type-15 (Palm Print Images), Type-17 (Iris Images), and other record types are contained in this EBTS.

## 1.2 File Format

An EBTS transaction is comprised of records. EBTS 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. All records in a transaction shall pertain to a single subject; biometric data used to identify another individual requires a separate transaction.

All of the records belonging to a single transaction shall be transmitted together. There may be multiple records in a transaction of each Record Type other than Type-1. Record Types-1 and -2 are used to describe the transaction and the subject respectively, and are required. These may be accompanied by one or more data records containing biometric data. The maximum number of records in a transaction is restricted to 1000.

In order to ensure that the transaction description information can be read by all systems, all fields within a Type-1 Record shall always be encoded using 7-bit American National Standard Code for Information Interchange (ASCII), with the 8th (leftmost) bit of each byte containing a zero. This is consistent with the specification of UTF-8 for XML encodings, since ASCII is a subset of UTF-8.

For other Record Types, the default character encoding for Traditional encoding is 7-bit ASCII. Users are encouraged to use UTF-8 for 'U' and 'user-defined' character types that do not require special control characters in Traditional Encoding. It is not possible to switch encodings within an XML transaction.

The first field in a Traditional tagged-field record (LEN) shall contain the length in bytes of the record. The second field shall contain the version number (VER) in the Type-1 record, while in other records this field contains the image designation character (IDC). In Traditional Record Types conveying binary data (Type-10 through Type-99) the data field will always be the last field in the Record. The remaining Traditionally encoded ASCII fields may occur in any order. For XML encoding, the field order is defined and laid out in the XML Information Exchange Package Documentation corresponding to this standard.

For Type-4 and Type-7 binary image records, the content and order of the recorded fields are specified by this standard. All fields and data in these Record Types shall be recorded as binary information in Traditional encoding. For XML encoding, all fields are represented as UTF-8 with the image data being Base-64 encoded.

The domain (1.013 DOM) field shall be mandatory for transactions to/from FBI/CJIS in support of proper file validation and field usage, as well as file interoperability among disparate systems.

### **1.3 Change Control**

The EBTS defines the interface between FBI/CJIS and the state, tribal, international, and other federal organizations' (OFO) systems. Any changes to the data fields or formats within the EBTS must honor previously published protocols to ensure that the systems are not adversely affected. Since these systems were developed independently, a convention has been established to coordinate enhancements within the various systems while maintaining interoperability. This convention is based on the tagged field structure defined in the ANSI/NIST-ITL standard and the understanding that field definitions cannot change over time or from system to system.

To facilitate system evolution, each system is assigned an autonomous range of field numbers that it is allowed to define to meet operational needs. These new fields cannot be made mandatory for established functionality, but enhance functionality for those systems wishing to incorporate the new definition. With this process in place, every system on the network has the opportunity to enhance its own system on its own schedule, yet no system is ever forced to make a change in order to maintain current functionality.

### **1.4 Error Handling**

Error handling takes on two primary forms within FBI/CJIS: front-end error detection and internal process error detection and correction. The front-end process examines every incoming transaction from a security and mandatory data perspective. Potential security violations are rejected and transferred immediately to a system administrator. Transactions lacking mandatory data, or that are incomplete in referenced content, are rejected back to the contributor. All mandatory data and all optional data fields are validated. Optional data failing this validation check are ignored. Mandatory data that fail this validation check are passed to a Quality Check (QC) Service Provider for resolution. If the service provider can resolve the issue, the transaction

will be forwarded for further processing. If the service provider cannot resolve the issue, the transaction will either be rejected or sent forward for attempted resolution later in the process.

Internal process error detections and corrections are performed any time FBI/CJIS attempts to utilize incoming data to perform a search or update a database. Errors in submissions detected at that time will be forwarded to a logic error resolution service provider. If the service provider cannot resolve the issue, the transaction will be rejected.

In the interpretation of logical records, the inclusion of tags that are not defined for the requested transaction are not to be considered an error. These fields will be ignored, and neither saved nor returned to the contributor in responses sent from FBI/CJIS. For XML encoding, the fields that are included in the State Defined Fields element (SDF) will be ignored by FBI/CJIS. This makes it possible to use a single transmission format across different systems, for example, to control both intrastate and interstate transmissions.

Fields generally 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 record or issuance of an error message. Rejection will occur when missing or incorrect data is received that would prevent processing of the transaction. The following list illustrates these types of errors.

- A mandatory field missing in a submitted record set (e.g., NAM field 2.018 is missing in the Type-2 record for the TOT of a CAR) would result in immediate rejection;
- The format of a mandatory field is incorrect (e.g., an alpha character is discovered in the SOC field) and would result in an attempt to correct the data;
- The range of data of a mandatory field is incorrect (e.g., a DOB of 18871332 was submitted—century, month, and day are all out of range) and would result in an attempt to correct the data;
- Incorrect data that cannot be corrected by a service provider and without which the transaction processing cannot continue would result in the transaction being rejected.

Appendix M lists the current set of error messages that are pertinent to the EBTS user.

## **1.5 Identifying Previous Transactions**

The Type-1 fields 1.009 - Transaction Control Number (TCN), and 1.010 - Transaction Control Reference (TCR) are used to link requests with their corresponding responses. Every transaction must contain a unique TCN. Transactions that refer to previous submissions also contain a TCR, which is defined as the TCN of the referenced submission.

When FBI/CJIS a request transaction and generates the response, it places the TCN of the request into the TCR field of the response as a reference number the submitter can use to mate the response with the original submission. FBI/CJIS places its own identifier for the response transaction in the TCN field.

The TCN in the response can be used by the submitter should the transaction need to be reopened for any purpose. For example, if FBI/CJIS rejected the first submission of a user-fee transaction, the user would place this number in the TCR field of the resubmitted transaction to enable FBI/CJIS to verify the user's authorization to resubmit within one year at no charge, if the rejection was due to poor quality fingerprint images. The following user defined fields, which are not stored at FBI/CJIS, are always returned exactly as submitted: ATN, SCO, EAD, OCP, RES, and TAA.

## **1.6 Data Storage in the FBI/CJIS Database**

Transaction data submitted to the FBI/CJIS may or may not be stored in the FBI/CJIS database. Data not stored is considered to be user-defined. If submitted, user-defined data is returned in the response transaction as an aid to the submitter in interpreting and routing the FBI/CJIS response. It may differ in format from the originally submitted data.

## **1.7 Guidance on ORI and CRI Usage**

The following description offers some guidance in using the Controlling Agency Identifier<sup>4</sup> (CRI) field to provide appropriate authorization to perform file maintenance. We develop this scenario by examining how an electronic submission might be formed by a contributor and passed to FBI/CJIS. Since contributors ultimately manage the use of the CRI field, this is only intended as a hypothetical example.

Assume a print is obtained by a local agency, passed to a county agency for processing, and subsequently to the FBI/CJIS Systems Agency (CSA) for transmission to the FBI/CJIS. In such a case, the transmission of field 1.008 - Originating Agency Identifier (ORI) and field 2.073 - CRI might appear as follows:

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<sup>4</sup> The CRI field must contain only NCIC-authorized ORIs.

## Biometric Search Ownership Flow

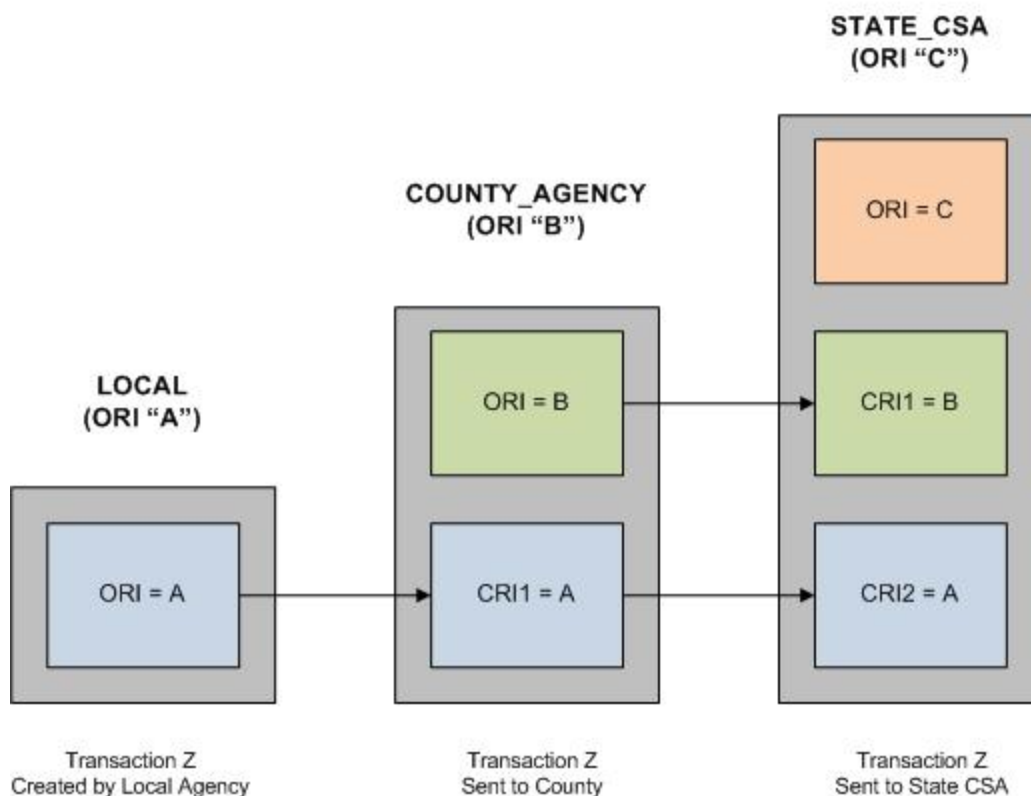


Figure 1 - ORI and CRI Ownership Flow

When generated at the local level, no CRI is required since this ORI is the originator. On receipt by the county agency and subsequent transmission to the state CSA, the original ORI is entered as the first instance of the CRI and the county ORI replaces the local ORI in the ORI field. On receipt by the state CSA and for subsequent retransmission to the FBI/CJIS, the local ORI is retained as CRI2, the county ORI is entered as CRI1, and the ORI of the state CSA is entered in the ORI field. The transaction is then forwarded to the FBI/CJIS via the FBI/CJIS WAN. CRI1, the county agency ORI, is then used as the authority for action and thus retains 'ownership' of the transaction. In the response, the transaction is sent to the ORI from which it was sent, and it is the responsibility of the state CSA to route it properly to the county agency identified in CRI1. The county agency, in turn, would route the response to the local agency as appropriate.

### 1.8 Reference Documents

American National Standards Institute/National Institute of Standards and Technology (ANSI/NIST) – Information Technology Laboratory (ITL) 1-2011 American National Standard, November 2011, [http://www.nist.gov/itl/iad/ig/ansi\\_standard.cfm](http://www.nist.gov/itl/iad/ig/ansi_standard.cfm)

For Information Systems – Data Format for the Interchange of Fingerprint, Facial, and Other Biometric Information, November 2011.

IAFIS-IC-00110(V3.1), Criminal Justice Information Services (CJIS) Wavelet Scalar Quantization IAFIS-IC-00110(V3.1), Criminal Justice Information Services (CJIS) Wavelet Scalar Quantization (WSQ) Grayscale Fingerprint Image Compression Specification, dated October 4, 2010, provides the definitions, requirements, and guidelines for specifying the FBI/CJIS's WSQ compression algorithm. The document specifies the class of encoders required, decoder process, and coded representations for compressed image data. Latent images are not compressed.

Fingerprint Image Compression Specification, dated October 4, 2010, [https://www.fbibiospecs.org/docs/WSQ\\_Gray-scale\\_Specification\\_Version\\_3\\_1\\_Final.pdf](https://www.fbibiospecs.org/docs/WSQ_Gray-scale_Specification_Version_3_1_Final.pdf)

## 1.9 Specific Changes to this Version

This version of the EBTS represents Full Operational Capability of the NGI system and includes the following list of new services (new/modified TOTs in parenthesis):

1. Face image searching (FRS, SRB, UBM, ERRB, UUBD)
2. Face and SMT text based searching (TXTSRCH, SRB)
3. Rap Back services (RBSCRM, RBSCVL, RBSR, RBRN, RBMNT, RBMNTR, RBN, RBIHS, RBIHSR, RBRPT, RBRPTR)
4. Disposition Reporting Enhancements (FDSP, SRE, DSPE, DSPR)
5. Civil event maintenance (CDEL, CDEL R)
6. System interoperability (XACT, XACTR, XMNT, XMNTR)
7. Foreign Subjects of Interest (FSI) RISC repository (FIDR, SPMNT, SPMNTR)
8. Iris image searching (future capability) (IIDS, IIS, SRB)

In addition to the new capabilities, several existing TOTs were expanded to support biometric types other than friction ridge. These TOTs are:

- IRQ, IRR
- FIS, FISR
- BDEC, BDECR
- BDEL, BDEL R
- BATQ, BATR

Also, the existing SRE response is modified to include the Biometric Image Enrolled (2.2061 BIE) and Biometric Image Available (2.2031 BIA) fields to inform the user of which biometrics from their submission were successfully enrolled and what biometric types are available for the matched identity (if SRF=IDENT) respectively. SRE is also modified to reflect Rap Back subscription information, when enrollment into Rap Back is requested within the tenprint fingerprint identification search request.



## 2 SCOPE

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The scope of the EBTS has been expanded over previous versions to include additional biometric types (e.g., face, palm) in recognition of the rapidly developing biometric industry. Significant efforts have been made to clearly delineate between those EBTS sections which describe the functionality within FBI/CJIS that is currently available to the Authorized Contributor community and what is anticipated to be developed in the future. Functionality under development and not yet available to the user community is referred to in this document as "Future Capability".

The ANSI/NIST-ITL standard includes record types for numerous biometrics. FBI/CJIS will accept biometric data for friction ridge (fingers, palms and joints/tips), photo (face and SMT) and iris records in accordance with the ANSI/NIST-ITL standard. NGI will provide identification and/or investigative services for each of these biometric types.

The NGI System will also provide Identity Management, which will involve linking records from the civil, criminal and new repositories by a unique identity reference. Today, several numbers are utilized to identify an individual (e.g., FBI Number (FBI) and Civil Record Number (CRN)). 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. The FBI/CJIS Division is working closely with the user community prior to the transition to UCN.

This document specifies in detail the file and record content, format, and data codes necessary for the exchange of fingerprint, palm print, photo, facial, and iris information between federal, state, and local users and the FBI/CJIS. It provides a description of all requests and responses associated with the electronic fingerprint identification service and other services. This specification is organized by User Services that include the following:

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

## 3 SERVICES AND TRANSACTION TYPES

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This section describes the User Services offered by NGI and the EBTS Transactions that comprise them. NGI offers the following User Services: Identification Service, Verification Service, Information Service, Investigation Service, Notification Service, and Data Management Service. These Services and their corresponding transactions are also listed in Table A-2 of Appendix A.

The transactions that are labeled 'Future Capability' are included in this specification to allow users the opportunity to see what is planned for future development.

### 3.1 Identification Service

These transactions will originate from live scan booking terminals, FBI Field Offices, card scanners or mobile devices at either the federal, state, or local level (see Figure 1 "Electronic Fingerprint Identification Submissions"). Local submissions may be processed by a local AFIS and electronically transmitted to a State Identification Bureau (SIB) for processing. If a positive identification is made at the state level, an Ident response will be transmitted back to the local agency. If it is a criterion offense, it will also be forwarded to the FBI/CJIS. Note: What constitutes a criterion offense is determined according to the submitting state's retention policy and legislation. The processing flow for a civil electronic fingerprint identification submission is similar to the criminal submission flow, except that in the event of state-level Ident response, the submission may still be forwarded to the FBI/CJIS for processing under Federal and/or state statutory authority.

If no identification is made at the SIB level, the data will be forwarded via the CJIS WAN to the FBI/CJIS for processing. Transmitted data will be automatically parsed, and a search will be conducted of the FBI/CJIS's friction ridge files. An identification of the submitted fingerprint images may be verified by an FBI/CJIS fingerprint examiner. Electronic responses<sup>5</sup> from FBI/CJIS to the contributor will be routed via the CJIS WAN through the SIB using the ORI. Subsequent routing to the arresting agency is made by the SIB using the CRI. Additional copies are routed by the SIB using the SCO field or other related information (see Appendices B and C for detailed ORI, SCO, and CRI definitions).

Responses to submissions or searches by OFOs, tribal, or international agencies will be transmitted directly to the submitting agencies. When these responses are possible identifications, these responses will contain an Identity History Summary giving the individual candidate's identification and disseminable arrest history, when requested. This information is provided in the Electronic Rap Sheet field of the response being returned to the submitting agency.

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<sup>5</sup> Established procedures for sending unsolicited messages to State Identification Bureaus in response to fingerprint submissions from Interstate Identification Index (III) participating states will not be affected.

These transactions are detailed in Appendix D with edit specifications for the fields used being found in Appendix C. These requests may include cascading searches of the Unsolved Latent File after a response has been provided to the Authorized Contributor.

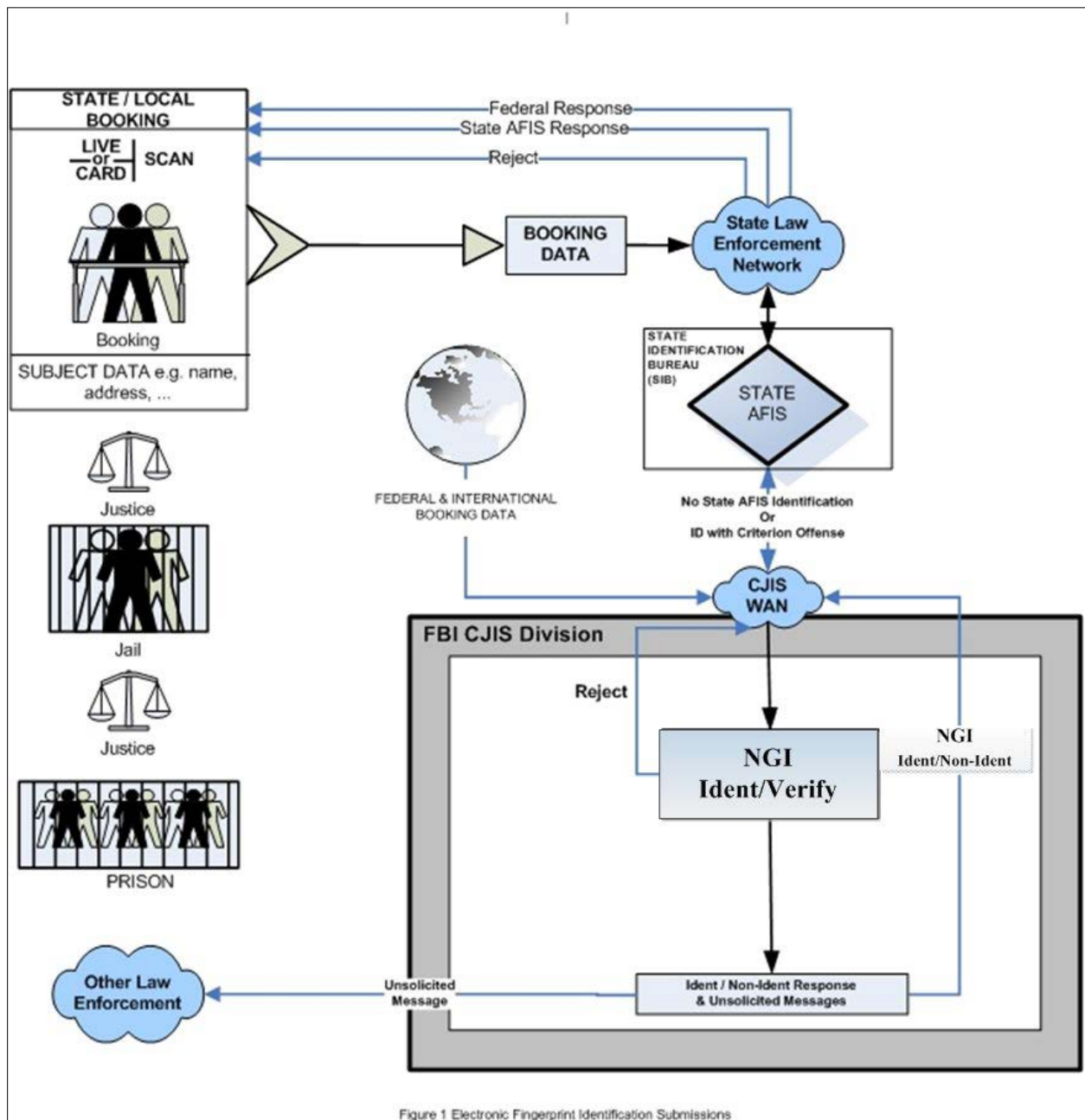


Figure 2 - Electronic Fingerprint Identification Submission

### 3.1.1 Tenprint Fingerprint Identification Submission

The Tenprint Fingerprint Identification submissions consist of criminal and civil transactions. The response time goals for these transactions are specified in Appendix A. The fingerprint images in these electronic submissions will be used to search against the criminal repository. In

addition to the fingerprint images, the submitter may optionally include palm print, joint/tip print, iris, face and/or SMT images of the subject. The contributor also may optionally include any supplemental fingerprint and palm print information with these submissions. If the contributor would subsequently add other biometric images to a tenprint search and retain event, they may reference the identifiers return in the tenprint response (SRE) within the Biometric Enrollment Transactions described in Section 3.6.3.1. The information within a retained submission will be added to an existing record, if a positive identification is made, or will create a new record if no identification was made. If a non-retain submission is not identified, no information will be retained in the FBI/CJIS databases. If a positive identification is made for a non-retain submission, the information on that submission will be added to the existing record and dissemination rules will govern the dissemination of this information.

Many of the tenprint identification submissions may be used to simultaneously establish a Rap Back subscription. Inclusion of the Rap Back subscription fields for a TOT in Table D-1 signifies that a TOT may establish a Rap Back subscription.

Cascaded searches of marked Special Population Cognizant (SPC) Files may be launched along with simultaneous searches of other external systems, such as Canada's Real-Time ID System or DHS IDENT. These will be indicated by the appropriate values for the desired destination in the Name of Designated Repository (2.098 NDR) field in the Type-2 record.

There are several types of electronic fingerprint identification submissions that will be accepted by the FBI/CJIS. The particular type of submission is identified in the Type of Transaction (TOT) field in the Type 1 record for each transaction. The following are the TOTs for identification submissions:

<b>TOT</b>	<b>TRANSACTION</b>
CAR	Criminal Tenprint Submission (Answer Required)
CNA	Criminal Tenprint Submission (No Answer Necessary)
CPDR	Criminal Fingerprint Direct Route
CPNU	Criminal Fingerprint Processing Non-Urgent
DOCE	Departmental Order Channeling Electronic
EMUF	Electronic In/Manual Out User Fee Submission
FANC	Federal Applicant (No Charge)
FAUF	Federal Applicant User Fee
FIDR	Foreign Information Direct Route
FNDR	Federal No Charge Direct Route
NNDR	Non-Federal No Charge Direct Route
NFUE	Non-Federal User Fee Expedite
NFUF	Non Federal Applicant User Fee
MAP	Miscellaneous Applicant Civil
MAPC	Miscellaneous Applicant Civil
DEK	Known Deceased
DEU	Unknown Deceased
MPR	Missing Person
AMN	Amnesia Victim

FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
SRE	Submission Results Electronic
ERRT	Tenprint Transaction Error

### **3.1.1.1 Criminal Tenprint Submission (Answer Required) (CAR)**

This transaction is a criminal arrest fingerprint submission for which the requester desires an identification decision response. It contains ten rolled and four plain impressions of all ten fingers, biographic descriptor data, as well as information relative to an arrest, custody, or supervisory status. The biographical data and fingerprint images are used to determine potential candidates with criminal records at the FBI/CJIS and a positive identification or non identification decision is determined. A response is returned to the contributor. The response will always contain the positive identification/non-identification decision and may contain the electronic Identity History Summary, if requested.

This TOT is also used for an inquiry on a criminal suspect or informant, in which case arrest, custody, or supervisory data may or may not be present (Retention Code set to "N"). Requirements for the use of the Arrest Segment Literal (ASL) and Court Segment Literal (CSL) fields in these cases are discussed in Appendix C.

### **3.1.1.2 Criminal Tenprint Submission (No Answer Necessary) (CNA)**

This transaction differs from a CAR request only in that no identification decision response is sent. However, a communication protocol acknowledgment will be returned to the contributor to confirm receipt of the transaction. Like the CAR, it contains ten rolled and four plain impressions, arrest, custody, or supervisory status data. The Retention Code for this transaction must be set to "Y."

### **3.1.1.3 Criminal Fingerprint Direct Route (CPDR)**

This transaction consists of a criminal arrest fingerprint submission that will be directly routed to a FBI/CJIS internal log application for special processing. The submission contains ten rolled and four plain impressions and arrest data. It requires inclusion of the mandatory Type of Search Request (TSR) field. FBI/CJIS will ensure the required EBTS fields and a TSR of "C" are present; otherwise, the submission will be rejected. Please see Appendix C for detailed information of the use of the TSR field.

Note: CPDR is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

### **3.1.1.4 Criminal Fingerprint Processing Non-Urgent (CPNU)**

This transaction is a criminal arrest fingerprint submission which differs from urgent criminal transactions in response time and in online (response) notifications. The submission contains ten rolled and four plain impressions and arrest data. Response due time for this transaction is set to 72 hours to prevent prioritization ahead of urgent criminal or civil submissions.

### **3.1.1.5 Departmental Order Channeling Electronic (DOCE)**

This transaction deals with “Individuals Seeking Their Own Identity History Record Pursuant to DO 556-73.” The Channeling Agencies will be responsible for the verification/authentication of the individual requesting the Identity History Summary from FBI/CJIS; no additional verification will occur.

The FBI/CJIS will only accept and process these submissions as electronic, non-retained civil transactions from approved Channeling Agencies. The submission contains ten rolled and four plain impressions, or three identification flat impressions, along with biographic descriptor data. An electronic response will be sent to the Channeling Agency indicating a positive identification, non-identification, or rejection. An Identity History Summary will be returned if the response is a positive identification.

### **3.1.1.6 Electronic In/Manual Out User Fee (EMUF)**

These submissions are for non-criminal justice purposes in which the contributor is charged a fee. The response for this submission is returned to the contributor manually instead of electronically. The submission contains ten rolled and four plain impressions, or three identification flat impressions, along with biographic descriptor data.

When the FBI/CJIS completes processing, it will print a non identification, positive identification, or Reject response report and mail it to the requestor. See Section 1.5 for a discussion of the use of TCN and TCR in no-charge resubmission of user-fee submissions that the FBI/CJIS has rejected. Such resubmissions are allowed only when the fingerprint image quality of the original submission was unacceptable.

Note: EMUF is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

### **3.1.1.7 Federal Applicant (No Charge) (FANC)**

This transaction pertains to an individual who is fingerprinted in connection with applying for criminal justice employment with the federal government. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. When this TOT is used, there is no charge assessed to the contributor. Federal agencies that are considered “User Fee” contributors must not use this TOT, but use “FAUF” instead (see description below).

### **3.1.1.8 Federal Applicant User Fee (FAUF)**

These submissions are to be used by: (1) any of the branches of the U. S. military in connection with individuals enlisting or being considered for Officers’ Candidate School; and (2) federal agencies in connection with employment, security updates, or contract personnel. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. See Section 1.5 for a discussion of the use of TCN and TCR in no-charge resubmission of user-fee submissions that the FBI/CJIS has rejected. Such resubmissions are allowed only when the fingerprint image quality of the original submission was unacceptable.

#### **3.1.1.9 Foreign Information Direct Route (FIDR)**

This transaction consists of a fingerprint submission from a federal or international agency that will be directly routed to an FBI/CJIS internal log application for special processing. The submission shall contain ten rolled and four plain impressions, or three identification flat impressions, along with biographic descriptor data.

Biometrics within retained FIDR submissions will be enrolled into the Foreign Subjects of Interest (FSI) RISC repository. As FSI is a subset of the RISC repository multi-tiered dissemination rules for identification against FSI entries will be followed, based on the value provided in the Tier Level Indicator (TLI 2.2046) field.

Note: FIDR is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

#### **3.1.1.10 Federal No Charge Direct Route (FNDR)**

This transaction consists of an applicant fingerprint submission from a federal agency that will be directly routed to a FBI/CJIS internal log application for processing. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. The FNDR requires inclusion of the mandatory Type of Search Request (TSR) field. FBI/CJIS will ensure a TSR of "C" is present; otherwise, the submission will be rejected. Please see Appendix C for detailed information of the use of the TSR field.

Note: FNDR is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

#### **3.1.1.11 Non-Federal No Charge Direct Route (NNDR)**

This transaction consists of an applicant fingerprint submission from a non-federal agency that will be directly routed to a FBI/CJIS internal log application for processing. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. The NNDR requires inclusion of the mandatory Type of Search (TSR) field. FBI/CJIS will ensure a TSR of "C" is present; otherwise, the submission will be rejected. Please see Appendix C for detailed information of the use of the TSR field.

Note: NNDR is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

#### **3.1.1.12 Non-Federal User Fee Expedite (NFUE)**

These non-federal civil applicant submissions are fee-based, high-priority fingerprint transactions that require an expedited search and response. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. See Section 1.6 for a discussion of the use of TCN and TCR in no-charge resubmission of user-fee submissions that the FBI/CJIS has rejected. Such resubmissions are allowed only when the fingerprint image quality of the original submission was unacceptable.

#### **3.1.1.13 Non Federal Applicant User Fee (NFUF)**

These submissions are for non-criminal justice purposes in which the contributor is charged a fee. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. Examples of the types of contributors of this type of transaction are federal and state banking institutions and regulatory agencies (such as stock exchanges, bankers' associations, securities dealers, Nuclear Regulatory Commission,

Securities and Exchange Commission, racing or gaming control boards, etc.). Their purpose for submitting such requests is to ascertain whether individuals who have applied for employment/volunteer training through the contributor organizations have any past criminal histories. See Section 1.6 for a discussion of the use of TCN and TCR in no-charge resubmission of user-fee submissions that the FBI/CJIS has rejected. Such resubmissions are allowed only when the fingerprint image quality of the original submission was unacceptable.

#### **3.1.1.14 Miscellaneous Applicant Civil (MAP)**

These no-charge submissions are for non-federal law enforcement and criminal justice employment. A submission contains either ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data.

#### **3.1.1.15 Miscellaneous Applicant Civil (No Charge) (MAPC)**

These no-charge submissions are used for non-federal law enforcement and criminal justice employment (including state and local law enforcement) as well as gun permit applications from criminal justice agencies. A submission contains ten rolled and four plain impressions, or three identification flat impressions, along with biographic descriptor data. When the FBI/CJIS completes processing, it will print a non identification, positive identification, or Reject response report and mail it to the requestor.

Note: MAPC is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

#### **3.1.1.16 Known Deceased (DEK)**

These transactions are submitted for a deceased individual whose identity is known to the contributor. The submission contains either ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. If the fingerprints are determined to be identical to those of a subject in the FBI/CJIS's criminal files, the subject's FBI/CJIS record will be marked as deceased. The ICO field in this submission may be filled with the text "DECEASED."

#### **3.1.1.17 Unknown Deceased (DEU)**

This transaction is submitted with fingerprints obtained from a deceased individual whose identity is not known to the contributor. The submission contains either ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. If the fingerprints are determined to be identical to those of a subject in the FBI/CJIS's criminal files, the subject's FBI/CJIS record will be marked as deceased and the contributor will be notified of the results. Should no identification result from a search of the criminal file, a search of the civil file will be performed. The subject will be added to the FBI/CJIS database when no identification results.

#### **3.1.1.18 Missing Person (MPR)**

These non-criminal submissions pertain to persons reported as missing. The submission contains either ten rolled and four plain impressions, or three identification flat impressions, along with biographic descriptor data. The submission causes a search of the FBI/CJIS files and may result in the placement of a "stop" in FBI/CJIS automated files to alert whenever a future fingerprint



submission (of any type) hits against the original set of fingerprints and establishes the person's whereabouts. These subjects are added to the FBI/CJIS database when no identification is made to an existing record. The Action to be Taken (ACN) field of the response will indicate if a "stop" has been established. The ICO field in this submission may be filled with the text "MISSING PERSON." The Retention Code for this transaction must be set to "Y".

### 3.1.1.19 Amnesia Victim (AMN)

These non-criminal submissions pertain to persons known to have amnesia. The submission contains ten rolled and four plain impressions or three identification flat impressions along with biographic descriptor data. The submission causes a search of the FBI/CJIS files and may result in the placement of a "stop" in FBI/CJIS automated files to alert whenever a future fingerprint submission (of any type) hits against the original set of fingerprints and establishes the person's identity. These subjects are added to the FBI/CJIS database when no identification is made to an existing record. The ACN field of the response will indicate if a "stop" has been established. The ICO field in this submission may be filled with the text "AMNESIA VICTIM." The Retention Code for this transaction must be set to "Y".

### 3.1.1.20 Rap Back Subscription Requests

The NGI's Rap Back Service was developed in response to a need for notification of activity that occurs after the initial processing and retention of fingerprint transactions. The NGI's Rap Back Service provides benefits in two domains of implementation: (a) for non-criminal justice applicants, employees, volunteers, licensees, etc, and (b) for individuals being processed through the criminal justice system. A Rap Back Subscription is established by either a retained Tenprint Identification Search request or a Subsequent Subscription request.

Rap Back Subscriptions may be established through optional Rap Back request fields in the Type-2 record for electronic Tenprint Identification Submissions. If a Rap Back Subscription is requested for a submission, the agency must also request retention of the fingerprints or the Rap Back subscription will be rejected.

If a Rap Back Subscription is requested for a Criminal Submission, the OCA field (2.009) shall be submitted. For Civil Rap Back Subscriptions, the Rap Back Expiration Date (2.2015) is required. In addition, the following fields have been added to these TOTs for use in establishing Rap Back Subscriptions:

**Table 1 Rap Back Subscription Fields used in Tenprint Identification TOTs**

EBTS Tag Number	EBTS Element	EBTS Element Name	Mandatory/Optional	Maximum Occurrences
2.2015	RBXD	Rap Back Expiration Date	Optional	1
2.2020	RBR	Rap Back Recipient	Optional	9
2.2040	RBT	Rap Back Trigger	Optional	40
2.2062	RBNF	Rap Back Activity Notification Format	Optional	1
2.2063	RBOO	Opt out of in State Rap Back Criminal Event Indicator	Optional	1
2.2064	RBUD	Rap Back User Defined	Optional	10

EBTS Tag Number	EBTS Element	EBTS Element Name	Mandatory/Optional	Maximum Occurrences
2.2065	RBC	Rap Back Category	Optional	1
2.2067	RBDI	Rap Back Disclosure Indicator	Optional	1
2.2070	RBATN	Rap Back Attention Indicator	Optional	1
2.2071	RBST	Rap Back Subscription Term	Optional	1

For more detailed information on Rap Back Services, see the Rap Back File Maintenance Submissions entry in the Data Management Service section.

### 3.1.1.21 Submission Results — Electronic (SRE)

This transaction is returned by NGI in response to identification search submissions. The Status/Error Message (2.060 MSG) will contain an identification/non-identification decision, the Event Identifier (2.2035 EVI) for retained submissions and the electronic Identity History Summary and Rap Back Subscription status, if they are requested. Table 2 describes which Name (2.018 NAM), FBI number/UCN (2.014 UCN), and State Identification Number (2.015 SID) are returned in the SRE for Criminal, Civil and Humanitarian (Unknown Deceased (DEU), Missing Person (MPR), and Amnesia Victim (AMN)) submissions, for both non-identification and identification results. A non-matching NAME is returned in the Electronic Rap Sheet (2.075 ERS) if one was requested. The following fields, which are not stored at FBI/CJIS, are always returned exactly as submitted: Attention Indicator (2.006 ATN), Send Copy To (2.007 SCO), Employer and Address (2.039 EAD), Occupation (2.040 OCP), Residence of Person Fingerprinted (2.041 RES), and Treat as Adult (2.087 TAA). A single electronic response will be sent to the contributor through the State Identification Bureau via the CJIS WAN. In the case that circumstances delay processing an EBTS request, the requestor will receive a preliminary electronic response coded as a Non-Ident with an ERS. The ERS will contain a report explaining results are not available due to a delay. When the NGI completes processing, it will print a non-identification or an identification response report and mail it to the requestor.

Identification Service transactions may trigger a separate search of external systems either via use of multiple values in the Type-2 record Name of Designated Repository (2.098 NDR) field or via business rules within NGI. Contributors will receive multiple SRE transactions when external systems are searched. The TCR field in the Type-1 header record of the Status/Error Message (2.060 MSG) will contain the TCN value from the Type-1 header record of the submission to enable correlation of the search responses.

**Table 2 Values of NAM, FBI/UCN and SID Returned in the SRE**

Type of Submission	Result	Value of Returned Field			Special Exceptions
		Name	FBI/UCN	SID	
Criminal, No FBI/UCN Submitted	Non-Ident Non-Retain	NAM Submitted	None	Submitted SID	
Criminal, No FBI/UCN	Non-Ident Retain	NAM Submitted	Master FBI/UCN	Submitted SID	

Type of Submission	Result	Value of Returned Field			Special Exceptions
		Name	FBI/UCN	SID	
Submitted					
Criminal, No FBI/UCN Submitted	Ident Non-Retain	Master NAM	Master FBI/UCN	Master SID	
Criminal, No FBI/UCN Submitted	Ident Retain	Master NAM	Master FBI/UCN	Master SID	
Criminal, FBI/UCN Submitted	Non-Ident Non-Retain	NAM Submitted	None	Submitted SID	STD in RAP SHEET
Criminal, FBI/UCN Submitted	Non-Ident Retain	NAM Submitted	Master FBI/UCN	Submitted SID	STD in RAP SHEET
Criminal, FBI/UCN Submitted	Ident Non-Retain	Master NAM	Master FBI/UCN	Master SID	STD in RAP SHEET
Criminal, FBI/UCN Submitted	Ident Retain	Master NAM	Master FBI/UCN	Master SID	STD in RAP SHEET
Civil, No FBI/UCN Submitted	Non-Ident Non-Retain	NAM Submitted	None	None	
Civil, No FBI/UCN Submitted	Non-Ident Retain	NAM Submitted	UCN	None	
Civil, No FBI/UCN Submitted	Ident Non-Retain	Master NAM	Master FBI/UCN	Master SID	
Civil, No FBI/UCN Submitted	Ident Retain	Master NAM	Master FBI/UCN	Master SID	
Civil, FBI/UCN Submitted	Non-Ident Non-Retain	NAM Submitted	None	None	STD in RAP SHEET
Civil, FBI/UCN Submitted	Non-Ident Retain	NAM Submitted	UCN	None	STD in RAP SHEET
Civil, FBI/UCN Submitted	Ident Non-Retain	Master NAM	Master FBI/UCN	Master SID	STD in RAP SHEET
Civil, FBI/UCN Submitted	Ident Retain	Master NAM	Master FBI/UCN	Master SID	STD in RAP SHEET
Humanitarian, No FBI/UCN Submitted	Non-Ident	NAM Submitted	Master FBI/UCN	None	
Humanitarian, No FBI/UCN Submitted	Ident	Master NAM	Master FBI/UCN	None	
Humanitarian, FBI/UCN Submitted	Non-Ident	NAM Submitted	Master FBI/UCN	None	STD in RAP SHEET
Humanitarian, FBI/UCN Submitted	Ident	Master NAM	Master FBI/UCN	None	STD in RAP SHEET

Under certain circumstances, the Electronic Rap Sheet (ERS) field in the SRE will contain Special Table Data (STD) explaining the special circumstance. For example, it would be included if the Master File UCN was marked expunged, deleted, or consolidated. The MSG field is added to notify the contributor of several warning activities that occurred with their transaction, such as when certain biometric sets did not meet quality and were not enrolled into the matcher. Currently defined external error messages are detailed in Appendix M.

If a Rap Back Subscription was requested, the SRE will contain all Rap Back Subscription Data Fields to ensure the Rap Back Subscription Owner is aware of any system modifications that were made to the Subscription. The response will indicate if the Rap Back Subscription was established with changes, with an indication of the field changed. Also, the response will indicate if a search was successful but the Rap Back Subscription was unable to be created.

If the contributor would subsequently add other biometric images to a tenprint search and retain event, they may reference the Event Identifier (EVI) from the tenprint response (SRE) within the Biometric Enrollment Transactions described in Section 3.6.3.1. The response (SRE) will also provide the Biometric Image Enrollment set field (2.2061 BIE) and the Biometric Image Available (2.2031 BIA) field. The BIE field will provide the biometric set identifier(s) (BSI) and image type(s) (IMT) of each biometric set or photo that was enrolled from the incoming identification transaction. Where photos are enrolled, the subject pose (POS) is populated for facial photos, and the scars, marks, and tattoos (SMT) field is populated for SMT photos. If the identification transaction results in identification to an existing UCN, the BIA field is returned in the SRE to indicate what biometric types (reference BIA Values Table in Appendix C) are on file for the identity, in support of future image requests (IRQs) by the user.

### **3.1.2 Latent Fingerprint Identification Submission**

The Electronic Latent Fingerprint Identification submission to the NGI will originate from the FBI/CJIS Field Office having legal jurisdiction of the case. This submission is strictly for the purpose of submitting crime scene information to the FBI/CJIS for processing in support of law enforcement identification, which differentiates it from latent investigation search submissions. The crime scene evidence will be processed and the desired latent prints will be electronically captured. The term "latent prints" includes fingerprints, palm prints, and supplemental fingerprints. Investigation of latent cases may also generate tenprints used for comparison purposes (e.g., suspect, victim, other personnel with authorized access to the crime scene). NGI is expanding the use of this submission to allow for tenprint fingerprint images to be submitted with this transaction, as Latent Fingerprint Image Submission (LFS) will be taking on the functionality of the discontinued Compare Fingerprint Submission (CFS) and Evaluation Report (ELR) TOTs. These submissions will trigger cascaded searches of marked Special Population Cognizant (SPC) files after a response has been provided to the Authorized Contributor. These submission TOTs are summarized in Appendix D with the field edit specifications found in Appendix C.

The particular type of submission will be identified in the Type of Transaction (TOT) field in the Type 1 record. The TOT for Latent Fingerprint Identification submission is:

**TOT TRANSACTION**  
LFS Latent Fingerprint Image Submission

The FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs:

**TOT RESPONSE TRANSACTION**  
LSR Latent Submission Results Electronic  
ERRL Latent Transaction Error

### **3.1.2.1 Latent Fingerprint Image(s) Submission (LFS)**

A Latent Fingerprint Image Submission (LFS) is used by FBI Field Offices to submit friction ridge images to latent specialists, which may or may not be searched by the latent specialist against NGI. The latent and/or known fingerprint images are transmitted along with the search criteria by the originator. FBI/CJIS Laboratory Latent Fingerprint Specialists will perform comparisons of the submitted friction ridge images against the candidate(s) selected and make the Identification / Non Identification / Inconclusive decision(s). The Identification / Non Identification / Inconclusive decision(s) will be transmitted as a Latent Submission Results response (LSR). If a latent search image was provided it may be stored in the ULF if requested in the submission by the originator, independent of the results of the search.

### **3.1.2.2 Latent Submission Results (LSR)**

This transaction is in response to a LFS. It includes a Search Results Findings (2.059 SRF) field indicating the Identification/Non-Identification/Inconclusive decision and. If the LFS results in an identification decision, it returns a name, UCN, and an Identity History Summary of the identified subject. The new Biometric Image Available (2.2031 BIA) field is added to reflect the biometric image types available for the Identity. If the contributor needs to retrieve the biometric images, they can request them via the Biometric Image Retrieval (IRQ) request.

### **3.1.2.3 Latent Transaction Error (ERRL)**

This transaction is returned by the NGI in response to a transaction that contained errors such as search exceeding the threshold, missing or inadequate quality fingerprints, missing mandatory information, or invalid contents. The Status/Error Message (2.060 MSG) field shall include additional information on the causes for the rejection. Error responses are described in the Error Message Format Section (Appendix M).

## **3.1.3 Rapid Fingerprint Identification Search Submission**

The Rapid Search functionality provides the ability to perform an identification search against a repository with a limited population. This results in a significantly reduced response time in comparison to Tenprint Fingerprint Identification Search response times. These Rapid

Fingerprint Identification Search Submissions are directed against the Repository for Individuals of Special Concern (RISC), which contains records for Wanted Persons, Immigration Violators, Known or Appropriately Suspected Terrorists, Sexual Offender Registry Subjects, and other persons of special interest. Rapid Search functionality has been expanded to include searching the criminal repository by authorized agencies. These transactions will initiate a cascaded search of the ULF and certain SPC files after a Rapid Search response has been provided to the Authorized Contributor.

The following TOT will be accepted by the FBI/CJIS for Rapid Fingerprint Identification Search Submissions:

**TOT TRANSACTION**  
RPIS Rapid Fingerprint Identification Search Submission

The FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs:

**TOT RESPONSE TRANSACTION**  
RPISR Rapid Fingerprint Identification Search Response  
ERRT Tenprint Transaction Error

#### **3.1.3.1 Rapid Fingerprint Identification Search Submission (RPIS)**

These Rapid Searches are submitted to NGI to perform the rapid fingerprint search of the FBI/CJIS's RISC repository. RISC provides the capability to perform a Rapid Fingerprint Identification Search (RPIS) against the RISC subjects of heightened interest warranting more rapid responses to inquiries. The transaction allows the user to request a full Identity History Summary as an optional return element. RPIS allows the user to request a facial photo be returned.

When the Name of Designated Repository (NDR) field contains values of 6 (all of RISC), 11 (Wants and Warrants), 12 (Sexual Offense Registry), 13 (Known or Suspected Terrorists) or 15 (Persons of Special Interest), the submission is allowed to have friction ridge position codes (2.074 FGP) of 1 - 15, and must contain at least two finger images along with optional biographic descriptor data. When NDR value of 1 (Criminal Master File) is used, the submission must have ten finger images (FGP = 1 - 10), with the Amputated or Bandaged (2.084 AMP) field being provided in for those images not included, along with optional biographic descriptor data.

Note: RPIS is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

#### **3.1.3.2 Rapid Fingerprint Identification Search Response (RPISR)**

Rapid Fingerprint Identification Search submissions will provide a rapid response to searches from authorized agencies. The behavior varies depending on the Repository searched.

When the RPIS search is directed against the RISC repositories, the Rapid Fingerprint Identification Search Response (RPISR) will consist of a Red/Yellow/Green indicator in the Search Results Findings (2.059 SRF) field corresponding to the match results against the RISC. A Red response indicates identification of a highly probable candidate in the RISC. However, a

Red response is not to be considered a positive identification, but rather the candidate score from the RISC search indicates a high likelihood of identification. It is recommended agencies submit a full tenprint fingerprint submission for positive identification. A Yellow response is a possible hit, indicating identification of a probable candidate (or candidates) in the RISC which is below the level of confidence established for a highly probably match (Red response) but above the level that excludes the possibility of a potential candidate (Green response). The Yellow response may only be used as an investigative tool providing leads for further investigative inquiries. A Green response indicates the search did not locate a viable candidate in the search repository.

For Red and Yellow responses, the Supplementary Identity Information (2.2023 SII) field may be returned and will contain important officer safety information such as Warrants, Offenses, and Caution codes from NCIC. When requested, the most recent full frontal photo for each candidate will also be returned, if available. The RPISR transaction may include full Identity History Summary data in the Electronic Rap Sheet (2.075 ERS) field for any returned candidates, if requested. The return of the full Identity History Summary may increase the response time service level. No fingerprint images will be returned for the Rapid Fingerprint Identification Search Response.

If two candidates are returned, a separate Type-2 record will be included for each candidate. The FBI Number (2.014 UCN), Name (2.018 NAM), Place of Birth (2.020 POB), Status/Error Message (2.060 MSG), Electronic Rap Sheet (2.075 ERS), and Supplementary Identity Information (2.2023 SII) fields will hold information unique to each candidate. In addition, the FBI Number (2.014 UCN) field of the first Type-2 record will contain a second occurrence that holds the FBI Number of the candidate in the second Type-2 record for reference.

When the RPIS search is directed against the CMF repository, the response will consist of a Red/Green indicator in the SRF field. No biographic data or identity information (such as field 2.014 UCN) is included in this response. It is expected a Red response will be followed by a separate Tenprint Fingerprint Identification request message to provide the identity of the subject.

#### **3.1.4 Electronic Fingerprint Disposition Submission (FDSP)**

The FDSP allows an Authorized Contributor to submit fingerprints with disposition information. The disposition information within the submission will be added to an existing record, if a positive identification is made, or will create a new record if no identification is made. The submitter may optionally include supplemental (joint, tip) fingerprint images, palm print images, and up to 25 photos of the subject. The Court Segment Literal (2.051 CSL) or disposition data may be obtained from the arresting agency, the court system, the penal system, or any other local, state, or federal entity that may render final adjudication in a criminal case. The response to a valid FDSP is an SRE.

The Disposition File Maintenance Submission (DSPE) may be used to submit disposition information on an existing identity (2.014 UCN) without fingerprints and is described in the Data Management Service section.

### **3.1.5 Iris Identification Search Submission (Future Capability)**

Iris Identification Search Submissions allow the user to submit a one-to-many identification search against the FBI/CJIS Iris Identification File (IIF) using an Iris image(s) as the search probe.

The following TOT will be accepted by the FBI/CJIS for Iris Identification Search Submissions:

**TOT TRANSACTION**  
IIDS Iris Identification Search Request

The FBI/CJIS responses to electronic submissions will provide search results or indicate an error via the following TOTs:

**TOT RESPONSE TRANSACTION**  
SRE Submission Results – Electronic  
ERRB Biometric Search Error

#### **3.1.5.1 Iris Identification Search (IIDS) (Future Capability)**

The IIDS transaction allows the user to submit the right and/or left iris images (both eyes preferred) for a given individual to be used for searching against the IIF for a possible match. All searches of the IIF are one-to-many searches. An IIDS that results in a score better than a predetermined match threshold is deemed a match (i.e., a highly probable identification). In the event of a match, information pertaining to the matched individual is returned in an SRE transaction. By default, IIDS searches that result in a match do not return any images. If the IIDS contains any errors, an ERRB is returned.

An IIDS search also initiates a cascaded search of the FBI's NCIC using the matched subject's FBI number/UCN. If existing NCIC data is located, the response includes limited data fields from the relevant NCIC file(s) to facilitate officer safety. The response may also contain the Identity History Summary (2.075 ERS), if requested.

Iris image search functionality is currently in the pilot phase. Therefore the IIDS is a limited use TOT that requires coordination with FBI/CJIS prior to use.

## **3.2 Verification Service**

This service provides user support for requests for specific biometric verification on an individual. It allows a user to submit a request to verify an identification of an individual by providing a unique identifier and fingerprint image. This Verification Service results in the confirmation of an individual's Identity based on a one-to-one comparison. The following are the TOTs for Verification submissions:



## TOT TRANSACTION

FVR Fingerprint Verification Request

The FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs:

## TOT RESPONSE TRANSACTION

SRE Submission Results - Electronic  
ERRT Tenprint Transaction Error

### 3.2.1 Fingerprint Verification Request (FVR)

These submissions will be used to verify the identity of a subject against a known FBI Number/UCN in the FBI/CJIS files. Submissions will include a quoted UCN and may include two to ten individual fingerprint images, either flat or rolled, contained in one to fourteen image records as detailed in Table L-3 of Appendix L. If the quoted UCN is not found, an error message (ERRT) will be returned.

### 3.2.2 Fingerprint Verification Response (SRE)

This transaction is returned by the FBI/CJIS in response to a Fingerprint Verification request. A Match response will be returned when the images on file for the submitted FBI Number/UCN match the submitted images and will contain the electronic Identity History Summary, if requested.. A No Match response will be returned when the images submitted do not match the images on file for the quoted UCN. Table 3-3 describes which NAM, FBI number, and SID are returned in the SRE for the Fingerprint Verification request. For further information, please refer to the Identification Services section, Submission Results – Electronic (SRE) subsection.

Table 3 Values of NAM, FBI and SID Returned in the SRE for FVR

Type of Submission	Result	Value of Returned Field			Special Exceptions
		Name	FBI	SID	
Fingerprint Verification Request	Match	Master NAM	Master FBI	Master SID	
Fingerprint Verification Request	No Match	NAM Submitted	None	Submitted SID	STD in RAP SHEET

### 3.2.3 Fingerprint Verification Error Response (ERRT )

These transactions are returned by the FBI/CJIS to indicate a transaction error for a Fingerprint Verification request. It includes the Status/Error Message field (2.060 MSG) indicating the type of error detected. Error messages are described in Appendix M.

### 3.3 Information Service

This service provides user support for requests for specific biometric or biographic information on an individual or individuals. It allows a user to submit a request for information on an individual(s) by specifying a unique identifier(s). Appendix E provides a summary of the Information Service transactions with the Type-2 fields that are optional and mandatory. Appendix C contains the detailed information for each of the Type-2 fields.

#### 3.3.1 Biometric Image Retrieval Submission

The Biometric Image Retrieval Submission is used for requesting images on file at the FBI/CJIS. To initiate a request for image(s) from the FBI/CJIS's database, the sending agency electronically transmits the unique record identifier of the subject (e.g., FBI number/UCN). To retrieve ULF images, the contributor should provide the UCN of the ULF record in the FBI Number/UCN field (2.014). This request will be routed to the FBI/CJIS, processed, and returned to the requester through the CJIS WAN. If the requester is a local agency, the request and response will be routed via the CJIS WAN through the state law enforcement network. There will be no manual intervention on the part of the FBI/CJIS.

The processing flow for image requests is illustrated in Figure 2, Biometric Image Retrieval Submission.

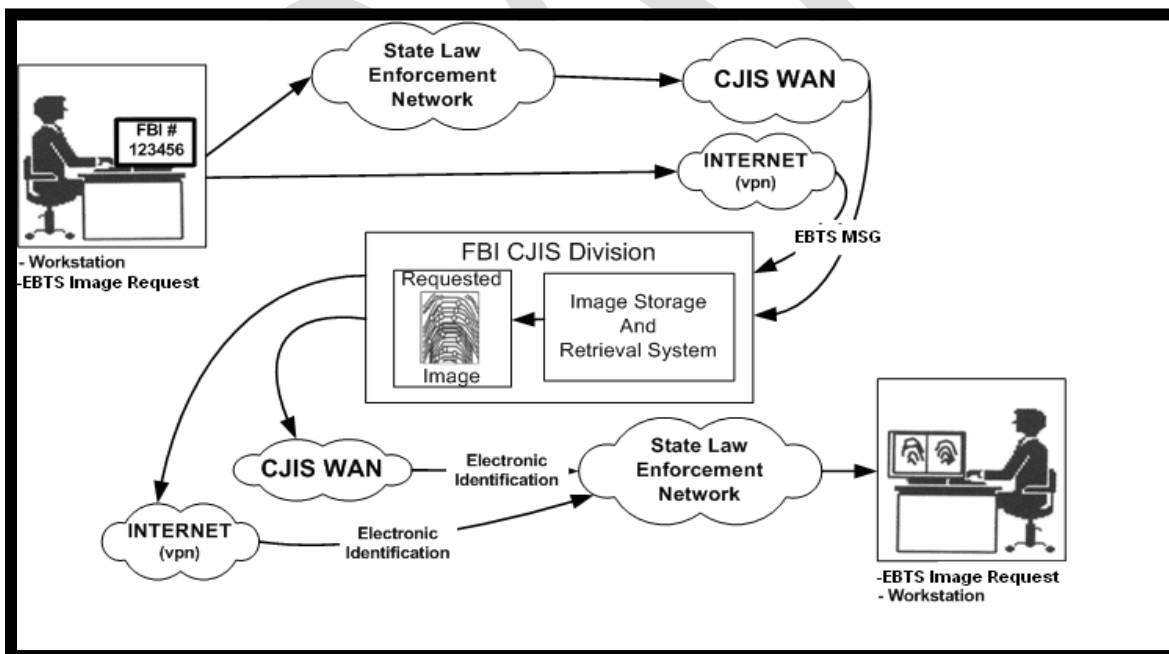


Figure 3 - Biometric Image Retrieval Submission

As an Image Request transaction (IRQ) could request images for multiple individuals by including a list of identifiers, the FBI/CJIS will respond with an Image Summary Response (ISR)

listing all requested identifiers and each corresponding response status after completing the individual retrievals and Image Request Responses (IRR).

The following TOTs are applicable for requests for images:

**TOT TRANSACTION**  
IRQ Image Request

The FBI/CJIS's response to requests for images is as follows:

**TOT RESPONSE TRANSACTION**  
IRR Image Request Response  
ISR Image Summary Response  
ERRI Information Transaction Error

To initiate a request for a photo set from the NGI, the sending agency electronically transmits the FBI Number/UCN and optionally a Date of Arrest (2.045 DOA) for criminal records. This request will be routed via the CJIS WAN to NGI, processed, and returned to the requester.

If the requester is a local agency, the request and response will be routed to the CJIS WAN through the state law enforcement network.

In support of existing systems that have not been upgraded for NGI, requests for photos may still be submitted to the FBI/CJIS using the CPR (Subject Photo Request) TOT. The response TOT of PRR (Photo Request Response) will contain the most recent frontal photo if no DOA is provided in the photo request. Photo retrievals may also be done using the IRQ transaction. The IRQ provides additional photo query capabilities and is the recommended TOT for photo retrieval.

The following TOTs are applicable *only* for request for legacy requests for Criminal Subject Photo Images:

**TOT TRANSACTION**  
CPR Subject Photo Request

The FBI/CJIS's response to requests for Criminal Subject Photo set images are as follows:

**TOT RESPONSE TRANSACTION**  
PRR Photo Request Response

### **3.3.1.1 Biometric Image/Feature Retrieval Submission (IRQ)**

This transaction enables users to retrieve images from the FBI/CJIS databases so a comparison can be made by the requester at user facilities. The requester identifies the subject(s) whose biometric images are being requested. The requester may also include additional parameters to specify particular modalities or image types of the subject(s). Up to 1,000 subject records may be requested per transaction. Specific fingerprint, palm print, supplemental fingerprints and palm

print images or the complete set may be requested. Other images, such as facial and SMT photos that are associated with that record may also be requested. The transaction will be processed, and requested images on file at the FBI/CJIS will be transmitted in the response. Each subject record identifier number in the request and each set of biometrics being returned for the subject will be addressed in a separate Image Request Response (IRR).

If the request contains any errors, an Information Error Response (ERRI) will be returned, including the reason for the return in the Status/Error Message (2.060 MSG) field. Errors associated with individual record identifier numbers, such as an image set not being on file, will be reported in the Fingerprint Image Summary Response (ISR).

NGI expands this capability to also allow for the retrieval of:

1. Tenprint FP Images from an Event using the Biometric Set Identifier (2.2029 BSI)
2. Tenprint FP Features associated with a retrieved image
3. Palm Print Images from an Event using the Biometric Set Identifier (2.2029 BSI)
4. Palm Print Features associated with a retrieved image
5. Supplemental (joint and tip) Prints from an Event using the Biometric Set Identifier (2.2029 BSI)
6. Supplemental (joint and tip) Features associated with a retrieved image
7. Latent Friction Ridge images and associated Features
8. Facial Photos
9. SMT Photos

In order to support multiple biometric sets and multiple image types for an identity, a new field, the Biometric Image Description (2.2028 BID), has been created. If the new BID field is populated, then the FBI Number/UCN (2.014) and Finger Numbers Requested (2.057 FNR) fields will be ignored; therefore, UCN and FNR are optional. The BID field is a set type that allows users greater flexibility in defining what images are requested. Please see Appendix C, Type-2 Element Data Dictionary, for a full description of the use of BID.

The Request Features Record (2.095 RFR) field can be used to request features with images. The FNR field has been expanded to allow palm print position codes (See Appendix P).

The submitter may indicate the desire for CJIS to return the Type-9 features records associated with the returned biometric images. The Type-9 features records may be used for comparison purposes by overlaying the features on the image records. For IRQ transactions requesting multiple sets of images, the request to return features records applies to all identified sets of biometric images. Separate IRQ transactions may be submitted if features are desired for some but not all biometric image sets.

### **3.3.1.2 Subject Photo Request (CPR)**

This TOT enables users to retrieve a photo set of Type-10 records from the NGI repository. Each set of photos consist of photos of a subject posed from different views and/or

Scars/Marks/Tattoos. Each photo set for an identity record is linked to the subject by the date of arrest (2.045DOA). The most recent frontal photo will be returned in the request as a default.

The transaction will be processed, and the requester-selected photo set on file at the FBI/CJIS will be transmitted in the response. If the request contains any errors, the Response Code (2.082 REC) field will be set to "N." A Photo Request Response (PRR) will be returned, including the reason for the rejection in the Response Explanation (2.080 EXP) field.

### **3.3.1.3 Image Request Response (IRR)**

This transaction is returned by the FBI/CJIS to provide requested images on file at the FBI/CJIS to the requester. Each image set identified in the IRQ request will cause a separate IRR response. The response will include the subject record identifier number (2.014 UCN) and the requested image set in the format they were enrolled: Type-4 or Type-14 fingerprint images, Type-10 photos, Type-15 palm print images, or Type-17 Iris images.

The IRR response will return one biometric image set along with the associated biometric feature set, if requested. The new Biometric Image Available (2.2031 BIA) field is added to reflect the biometric image types available for the Identity. This field will only be populated with the information contained in the BID field of the IRQ. The FBI Number (2.014 UCN) field that may contain either the FBI/UCN or Legacy Unsolved Latent Number (2.086 SCNA) of the returned record. When a composite set is returned, no Biometric Set Identifier (2.2029 BSI) is returned in the message.

### **3.3.1.4 Image Summary Response (ISR)**

This transaction is returned by the FBI/CJIS to summarize the results of the IRQ image request processing. This transaction contains the listing of each subject record identifier number returned. It is suggested that the submitting agency do a comparison between their original image request and this image summary response to determine which images were not returned due to invalid FBI number or image not on file.

New fields will be used to inform the user of all the identity's biometric sets that were returned when the IRQ contained the Biometric Image Description (2.2028 BID) field. New fields added to the message are the Image Type (2.026 IMT) to specify the type of biometric set returned, and Biometric Set Identifier (2.2029 BSI) to specify the exact biometric set returned if the set is not a composite set. The subject UCN and the SID, IMT, and BSI fields are all presented in the same order, such that each occurrence of the field corresponds with the same ordered element of the other fields (e.g., the third UCN/SID listed corresponds to the third instance of the IMT and the third instance of the BSI).

### **3.3.1.5 Photo Request Response (PRR)**

Each Subject Photo Request (CPR) will receive a Photo Request Response (PRR). Along with the requested photos, this transaction indicates the condition of each request. If the request contains any errors FBI/CJIS will return the following values: FBI=0000000; CRI=XXXXXXXX; REC="N"; EXP= message code of the first detected error.

### 3.3.1.6 Image/Information Transaction Error (ERRI)

This message is returned by the FBI/CJIS to indicate a transaction error. It includes a Status/Error Message (2.060 MSG) field indicating the type of error detected. Error responses are described in the Error Message Format Section (Appendix M).

### 3.3.2 Biometric Audit Trail Retrieval Submission

These transactions enable users to retrieve audit trail information for their images stored in the NGI database. The audit information consists of: the agencies which have received the specified image(s), when the image(s) were transmitted, and for what reason. The requester provides the Subject Identifier (2.014 UCN) and the Biometric Set Identifier (2.2029 BSI) for the image set they want audit trail information returned. If the Biometric Set Identifier is not included, then the UCN is mandatory, and the request will encompass all the biometric sets for the UCN which are owned by the submitter. The owner is defined as the Controlling Agency Identifier (2.073 CRI) who enrolled the image or the State Bureau for the CRI.

The following are the TOTs for Biometric Audit Trail Retrieval Submission:

<b>TOT</b>	<b>TRANSACTION</b>
BATQ	Biometric Audit Trail Retrieval Query Request

The FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs.

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
BATR	Audit Trail Retrieval Response
ERRA	Administrative Transaction Error

#### 3.3.2.1 Biometric Audit Trail Retrieval Query Request (BATQ)

This transaction is used to retrieve the Audit Trail for either a specific biometric set or multiple biometric sets for an identity or latent record. An Audit Trail is defined as the details of the disseminations of a biometric image.

For each request, the submitter of the transaction shall specify what image audit trails that FBI/CJIS will return. The main selection criteria are the FBI Number/UCN (2.014 UCN) to specify the Identity or latent record, Biometric Set Identifier (2.2029 BSI) to specify a specific biometric set, and Image Type (2.026 IMT) to specify the image types. Only a record owner (contributor) is allowed to request an audit trail: a transaction error is returned if anyone other than the owner tries to request it.

When IMT is provided without BSI, audit details are returned for all of the biometric sets of type IMT that are owned by the requestor for the specified Identity or latent record (UCN). When BSI

and IMT are not provided, the audit trail details returned will consist of all biometric sets owned by the requestor for the specified Identity or latent record.

The response to this request will be Audit Trail Retrieval Response (BATQ).

### 3.3.2.2 Audit Trail Retrieval Response (BATR)

This transaction is returned by the FBI/CJIS to provide the audit trail record to the requester. This message contains details of when and how the biometric sets specified in a BATQ have been disseminated. If images from the requested biometric set have not been disseminated, a successful BATR is returned, but it will not have any instances of audit trail data.

The Audit Trail Data is returned in the Audit Trail Record (2.2032 ATR) field which contains the Biometric Set Identifier of the image, the Image Type, and Finger Positions (when the complete set is not returned) for each requested image. Please refer to Appendix C, Type-2 Data Dictionary, for the complete list of the Audit Information returned in an ATR. If the max occurrence of the ATR is reached, the Status/Error Message (2.060 MSG) field will be populated, informing the user.

### 3.3.2.3 Audit Trail Transaction Error (ERRA)

If the requestor does not own any of the images selected by the BATQ request criteria, this will result in an Administrative Transaction Error (ERRA), including the reason for the error in the Status/Error Message (2.060 MSG) field. An ERRA is also generated if the submitted Biometric Set Identifier (2.2029 BSI) or Image Type (2.026 IMT) is not associated with the submitted FBI Number/UCN (2.014 UCN). Error responses are described in the Error Message Format Section (Appendix M).

### 3.3.3 Rap Back Information Retrieval Submission

This service provides Rap Back Subscribers the ability to retrieve their Rap Back Subscription Information. The following are the TOTs for Rap Back Information Retrieval submissions:

<b>TOT</b>	<b>TRANSACTION</b>
RBRPT	Rap Back Subscription List Request
RBIHS	Rap Back Identity History Summary Request

The FBI/CJIS's responses to electronic submissions will provide search results or indicate an error via the following TOTs:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
RBRPTR	Rap Back Subscription List Response
RBIHSR	Rap Back Identity History Summary Response
ERRI	Information Transaction Error Response

For more detailed information on Rap Back Services, see the Rap Back File Maintenance Submissions entry in the Data Management Service section.

### **3.3.3.1 Rap Back Subscription List Request (RBRPT)**

The Rap Back Subscription List Request is used when a Rap Back Subscription owner wants to retrieve a list of all Identities for whom they have NGI Rap Back Subscriptions, and their statuses. The Rap Back Subscription List can be requested by the Rap Back Subscriber, or the State Bureau or other Submitter for the Controlling Agency Identifier (2.073 CRI). The Subscription Owner is defined as the CRI that subscribed to the Identity (CRI1). The State Bureau will have the option to request all Rap Back Subscriptions which were routed through the state (i.e., the establishing ORI on the incoming submission). Filtering parameters for this transaction include Rap Back Subscription Identifier (2.2048 RBSI), Rap Back Notification Recipients (2.2020 RBR), and Expiration Date Range (2.2068 DTR).

### **3.3.3.2 Rap Back Subscription List Response (RBRPTR)**

The Rap Back Subscription List Response returns the submitted filtering parameters and a list of Subscriptions that match them. If the Rap Back Subscription List (RBSL) exceeds 10MB or 10,000 Rap Back Subscriptions then the request is rejected with an ERRI.

### **3.3.3.3 Rap Back Identity History Summary Request (RBIHS)**

This transaction provides a Rap Back Subscription Owner the ability to request an Identity History Summary for an individual enrolled in the Rap Back Service, using the Rap Back Subscription Identifier (2.2048 RBSI) and the Rap Back Activity Notification Identifier(s) (2.2041 RBNI) provided within Rap Back Activity Notification(s) (RBN). The RBNI is used to return the event which triggered each RBN.

### **3.3.3.4 Rap Back Identity History Summary Response (RBIHSR)**

This transaction is returned in response to a Rap Back Identity History Summary Request. The Identity History Summary (2.075 ERS) provided in the response is the standard Identity History Summary with all the standard response generation rules applied. The response will also contain the triggering event data.

## **3.4 Investigation Service**

To conduct an investigation search of the FBI/CJIS's database, the sending agency will electronically transmit images and descriptive information as required by the FBI/CJIS, or user-extracted characteristics. Biometric characteristics include classification, features, and any other derived data required by FBI/CJIS. If the originator is a local law enforcement agency, the request will go through their State Identification Bureau. The subsequent submission will be searched automatically with no additional manual editing or processing. If candidates are identified, no identification decision is made by the FBI/CJIS. If candidates are identified, no



identification decision is made by the FBI/CJIS. Instead, up to 99 candidate UCNs are returned to the transmitting agency, along with fingerprint images for the first occurrence of each UCN in the candidate list. Appendix E provides a summary of the Investigation Service transactions with the Type-2 fields that are optional and mandatory. Appendix C contains the detailed information for each of the Type-2 fields.

### **3.4.1 Tenprint Fingerprint Investigation Submission**

The tenprint investigation process differs from electronic tenprint identification submission processing in that there is no manual intervention on the part of the FBI/CJIS. The user can request specific finger images, up to all 14 fingerprint images, to be returned with the response via the Fingerprint Number(s) Requested (2.057 FNR) field.

The following list of TOTs is applicable to tenprint searches transmitted to the FBI/CJIS:

<b>TOT</b>	<b>TRANSACTION</b>
TPIS	Tenprint Fingerprint Image Search
TPRS	Tenprint Rap Sheet Search

A hierarchical approach to tenprint searches must be adhered to (i.e., for TPIS). Submissions by local agencies must be processed by the local AFIS (if available) and electronically transmitted to a state AFIS (if available) before being submitted to the FBI/CJIS. If an identification decision is made at any of the previous levels, the identification response will be transmitted to the originating agency and there will be no further processing of the request at a higher level.

The processing flow for Tenprint Fingerprint Image Search (TPIS) submissions is shown in Figure 3, "Investigation Fingerprint Submissions."

All electronic transactions between the FBI/CJIS and the originating state agency will be routed via the CJIS WAN. State and local agencies must handle the continuance of these transactions among themselves through their state network. For OFOs, tribal, or international agencies, routing of search and response will be via their connection to the CJIS WAN.

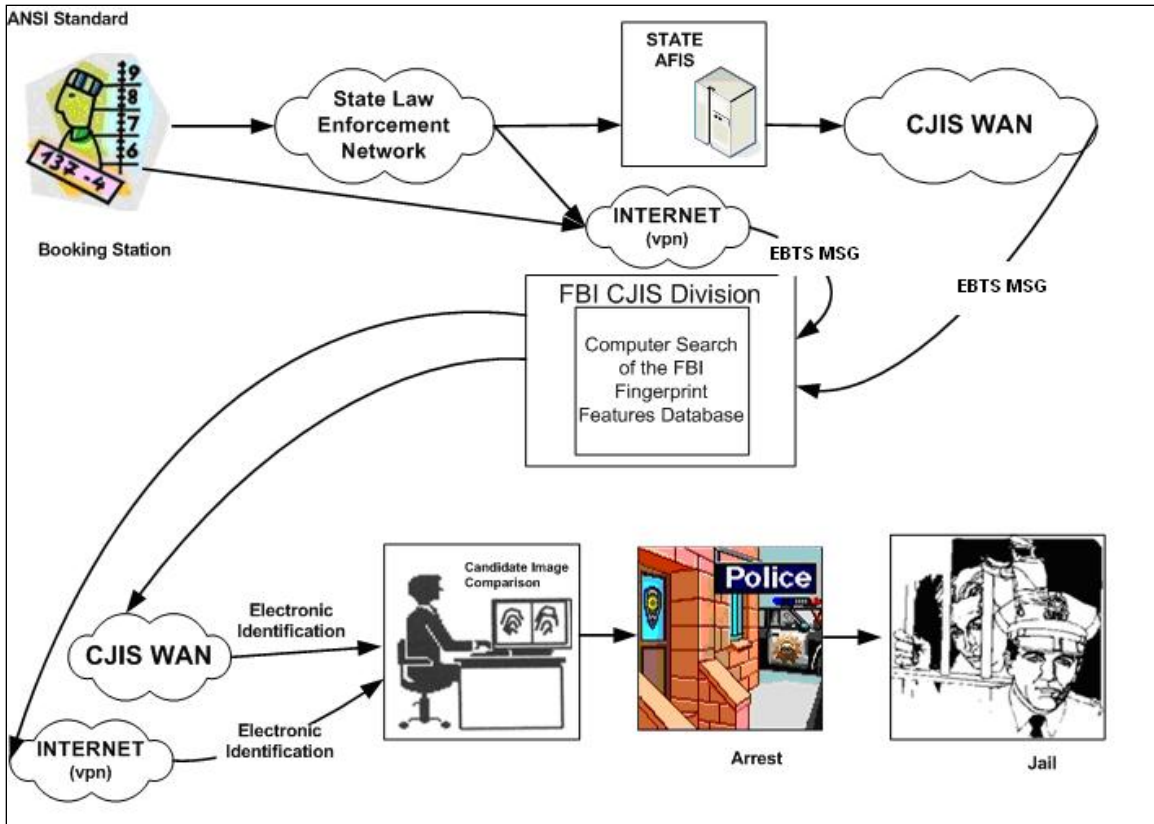


Figure 4 - Investigation Fingerprint Submission

The following are the potential responses to tenprint fingerprint submissions:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
SRT	Search Result Tenprint
ERRT	Tenprint Transaction Error
TPRR	Tenprint Rap Sheet Response

### 3.4.1.1 Tenprint Fingerprint Image Search (TPIS)

The Tenprint Fingerprint Image Search (TPIS) contains tenprint fingerprint images along with any descriptors submitted by the submitter. The submitter may designate which repository(ies) to search by including the desired value(s) in the Name Designated Repository (2.098 NDR) field (e.g., criminal, civil, ULF). There will be no manual editing of fingerprint characteristics. The finger number of images returned in the response may be specified by including the finger position in this request. Otherwise, all 14 fingerprint images for each candidate are returned. The search process of the fingerprint files is conducted and the results transmitted to the originator.

### **3.4.1.2 Tenprint Rap Sheet Search (TPRS) and Responses (TPRR)**

The Tenprint Rap Sheet Search (TPRS) contains tenprint fingerprint images along with any descriptors submitted by the originator. The Amputated or Bandaged (2.084 AMP) field is to be included for every amputated or unprintable finger. The fingerprint characteristics will be automatically extracted from the images at the FBI/CJIS with no human intervention. There will be no manual editing of fingerprint characteristics. The search process of the criminal fingerprint files is conducted and the results transmitted to the originator. The Tenprint Rap Sheet Response (TPRS) consists of identity histories for up to the top twenty candidates. Images are not returned as part of this process.

Note: TPRS is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

The Tenprint Rap Sheet Response (TPRR) will contain a list of candidates and their identity history in the Electronic Rap Sheet (2.075 ERS) field, but no fingerprint images are included.

### **3.4.1.3 Search Results — Tenprint (SRT)**

This transaction is returned by the FBI/CJIS in response to a TPIS request. The Search Result Tenprint (SRT) response will include a candidate list and the fingerprint images of the highest scoring candidates who potentially match the submitted fingerprints, up to the number specified in the Number of Images Requested (2.2010 NIR) field. Up to 99 candidates may be requested by including the Number of Candidates Returned (2.079 NCR) field in the search request. If NCR is not included in the request, 20 candidates will be returned. If NIR is not specified in the search request, only images from the highest scoring candidate will be returned.

### **3.4.1.4 Tenprint Transaction Error (ERRT)**

This transaction is returned by the FBI/CJIS to indicate a transaction error. It includes a Status/Error Message (2.060 MSG) field indicating the type of error detected. Error responses are described in the Error Message Format Section (Appendix M).

## **3.4.2 Latent Friction Ridge Investigation Submission**

The Latent Friction Ridge (LFR) system provides accurate latent search results through the use of latest generation matching algorithms coupled with an event-based (rather than composite) friction ridge repository. This event-based repository is referred to as the Friction Ridge Investigative File (FRIF). The LFR supports investigative searches of palm and supplemental (joint and tip) prints, in addition to the traditional search of tenprint fingerprint impressions.

An Authorized Contributor may transmit one or more latent print images and/or corresponding features sets, assumed to be from the same subject, to be searched against the various NGI friction ridge repositories. This latent print search request will originate from the agency having legal jurisdiction of the case (federal, state, local or international). To conduct a search with the captured latent prints, the originating agency will electronically transmit the latent print images within a Latent Friction Ridge Image Search (LFIS) or the latent print features and preferably the latent print images within a Latent Friction Ridge Features Search (LFFS) transaction. The latent image in an LFIS/LFFS transaction should be known to be upright (i.e., for Fingerprint tip up  $\pm 15^\circ$ ), with no obscuring background or multiple impressions in the image. For the LFFS that

includes a latent image with a Type-9 Record, the Type-9 may optionally provide image orientation information (see 9.020 and 9.301) that deviates from upright.

By default, these images and/or features will not be stored in the Unsolved Latent File (ULF). If the criminal master file was included in the Name of Designated Repository (2.098 NDR) field, the user may override this behavior by setting the Unsolved Latent File Flag (2.083 ULF) to "Y". All searches must adhere to a hierarchical approach. Submissions by local agencies must be processed by the local AFIS (if available) and electronically transmitted to a state AFIS (if available) before being submitted to the FBI/CJIS. If an identification decision is made at any of the previous levels, the identification response will be transmitted to the originating agency and there will be no further processing of the request at a higher level. All electronic transactions between the FBI/CJIS and the originating agency will be routed via the CJIS WAN or other approved electronic communication medium.

Latent Friction Ridge investigative search TOTs will accept NDR values specified in EBTS, which includes the capability to request a simultaneous search of other external systems, such as Canada's Real-Time ID System or DHS IDENT. The default behavior when the NDR field is not present is to only search the criminal repository. For a given latent investigative search, NGI will not search both known (FRIF) and unknown (ULF) repositories. If the NDR field contains both repository designations, only the known repository will be searched, and this information will be reported in the Search Results Latent (SRL) response (see 2.060 MSG field of SRL). Additionally, the user will be able to select in investigative searches whether features and matched minutiae for each candidate print are returned in the SRL.

The extended feature set and matched minutiae will reside in the Extended Feature Set (EFS) section of the Type-9 Record for the candidate(s), as defined in the ANSI/NIST-ITL 1-2011 standard. In order to successfully utilize the new NGI investigative services, changes have been made to the investigative TOTs within EBTS, and will require system programming updates to take advantage of these new capabilities. FBI/CJIS will continue to accept legacy FBI minutiae fields 9.014 – 9.030 to support backwards compatibility.

The biographic and/or biometric descriptor data contained in the Type-2 Record(s) of the LFFS/LFIS search transaction are used to reduce the search penetration of the desired repositories. If two Type-2 Records are included in the search transaction, the Type-2 with the ULF flag set to "Y" is used for deposit of the latent into the ULF, while the Type-2 with ULF set to "N" sets the search filtering criteria to limit file penetration: if ULF flags in both are "Y" or not included, the first Type-2 will be used for searching and the second will be used for the deposit into the ULF. Limiting file penetration by filtering searches based on known information increases search accuracy by reducing the size of the search gallery, therefore reducing the probability that the true match will be replaced in the candidate list by other potential matching impressions. Setting file penetration limits on the latent search also improves search response time. Investigative services users are encouraged to limit searches of the civil and/or criminal file to no more than 50% of the population of the file(s) being searched. NGI supports the biometric filter criteria friction ridge position code and pattern classification, and also supports the biographic filter criteria Date of Birth (only the year of birth is used), Race, Gender, Place of Birth, and Place of Arrest (GEO 2.044). A Latent Penetration Query (LPNQ) may be sent to

determine the percentage of repository penetration prior to initiation of a search. The results will be returned in a Latent Penetration Response (LPNR). The response will include the percentage of the repository penetration determined from the submitted parameters in the fields of the Type-2 Record. Detection of errors will cause a Latent Transaction Error (ERRL) response.

The Friction Ridge Generalized Position (2.074 FGP) field may contain one or more of the possible finger or palm positions that may match the latent image. The integer code number corresponding to the known or most probable finger position will be taken from the ANSI-NIST ITL Standard Finger Position Table or Palm Print Position Table and entered as a one- or two-character ASCII subfield. (See Appendix P for acceptable values.) Additional finger and/or palm positions may be referenced by entering the alternate position codes as subfields separated by the “RS” separator character. The code “0” for “Unknown Finger” shall be used to reference every finger position. The code “20” for “Unknown Palm” shall be used to reference every listed palm print position. The Type-2 Print Position Description (2.2030 PPD) field is used when FGP is set to “19”, in order to filter which part(s) of a supplemental print(s) should be searched. The code “18” for “Unknown Friction Ridge” shall be used to reference every listed friction ridge position and will be used as the default when FGP is omitted or blank.

NGI will continue to support the multi-latent fingerprint search request, where finger positions 1 thru 10 are supported. Multiple fingerprint images may be searched if the submitter believes the images are from a single subject, and a unique finger position is provided for each image. Only this set of fingerprint positions will be searched.

When submitting a single latent image, the submitter may use the Pattern Level Classification (2.034 PAT) and FGP fields as follows to indicate that the position is unknown while allowing speculation on the finger position: (1) set the Finger Number subfield of FGP to “0” to indicate the finger position is unknown while supplying the Pattern Classification Code as usual; (2) in conjunction, submit one or more instances of the FGP field containing the finger position guesses; and (3), set the FGP field of the Type-7/13 record, to “0.” If many finger guesses for a single finger search are provided, the PAT field should be entered only for the first finger guess and will be automatically duplicated by FBI/CJIS for all other finger guesses.

The following list of TOTs is applicable to latent friction ridge searches transmitted to the FBI/CJIS:

<b>TOT</b>	<b>TRANSACTION</b>
LFIS	Latent Friction Ridge Image Search
LFFS	Latent Friction Ridge Features Search
LPNQ	Latent Penetration Query

The following are the potential responses to latent friction ridge transactions:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
SRL	Search Result - Latent
LPNR	Latent Penetration Response
ERRL	Latent Transaction Error

Figure 4 provides a high level view of the latent friction ridge investigative service workflow, to include the notification service and data management service transactions explained in sections 3.5 and 3.6 respectively.

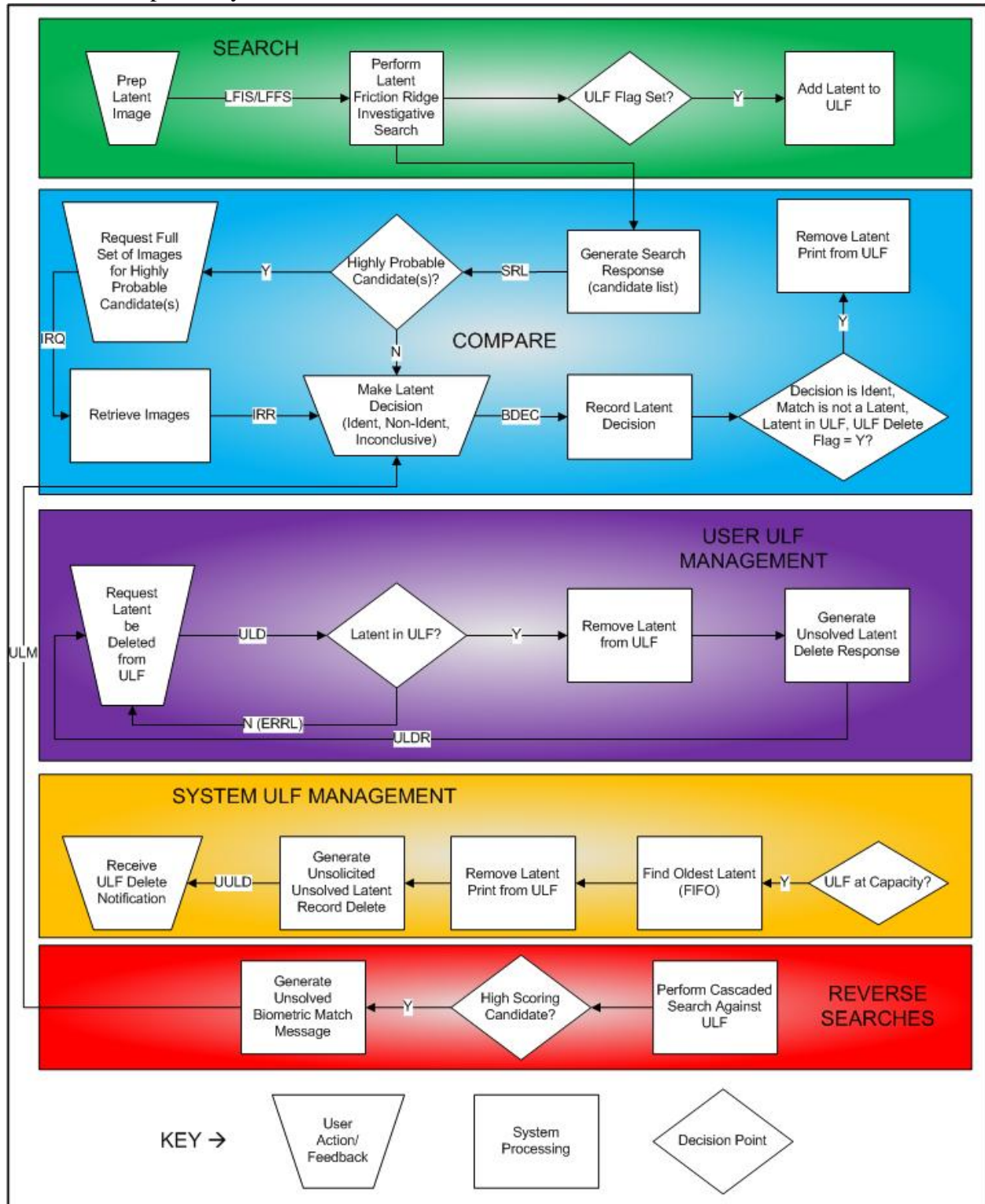


Figure 5 - Latent Friction Ridge Investigation Workflow

The following paragraphs describe in detail the TOTs associated with the Latent Friction Ridge Investigative Service.

#### **3.4.2.1 Latent Friction Ridge Image(s) Search (LFIS)**

In the Latent Friction Ridge Image Search (LFIS) transaction, the latent friction ridge images are transmitted with search criteria by the originator. The friction ridge features will be automatically extracted from the images with no human intervention: there will be no manual editing of friction ridge characteristics by FBI Latent Examiners. FBI/CJIS will conduct a search of the designated repository or repositories and will transmit the results back to the originator. In the event that images are of insufficient quality for the LFR system to be able to extract features and perform a search, FBI/CJIS will respond with a Latent Transaction Error message.

#### **3.4.2.2 Latent Friction Ridge Features Search (LFFS)**

In the Latent Friction Ridge Features Search (LFFS) transaction, the latent friction ridge features are extracted by the originator and transmitted with the search criteria. Inclusion of the latent search image is highly recommended to increase search accuracy. FBI/CJIS will conduct a search of the designated repository or repositories and will transmit the results back to the originator. The friction ridge features referred to here are the Extended Feature Set (EFS) friction ridge features as defined in Appendix J: the originating agency must have the capability to extract and encode friction ridge features compliant with the EFS to use this TOT.

#### **3.4.2.3 Search Results - Latent (SRL)**

The response to a Latent Friction Ridge Investigation Submission is the Search Results Latent (SRL) response, which includes up to three ranked Candidate Investigative Lists (2.2033 CNL) - one for each friction ridge type (fingerprints, lower palm, upper palm) searched - and the friction ridge images of the highest scoring candidates who potentially match the submitted latent prints, up to the number specified in the Number of Images Requested (2.2010 NIR) field. Up to 99 candidates may be requested by including the Number of Candidates Returned (2.079 NCR) field in the search request. If NCR is not included in the request, then the top 20 candidates will be included in each ranked candidate list. If NIR is not specified in the search request the top 20 matching images will be returned per ranked candidate list. The NCR and NIR field values in the SRL may be smaller than their values in the LFIS/LFFS request (i.e., their values are not simply echoed from the search request). In addition, if the search included an indication that the latent image should be stored in the Unsolved Latent File, the SRL will return the FBI Number/UCN (2.014 UCN) of the stored unsolved latent image.

If the latent search included more than one latent print (a multi-latent search), a merged candidate list will be returned for each friction ridge type searched.

If requested in the originating search request, features and matched minutiae for each candidate print image are returned in the SRL response. The features and matched minutiae will reside in the EFS section of the Type-9 Record(s). When features are requested, the SRL will contain biometric data for both probe and candidates. The Image Designation Character (2.2033J IDC) values for the candidate list images/features will be recorded in the CNL, while the IDC for the probe features will not. The probe features will always precede the candidate image and features in the transaction, therefore, when NIR is 20 there will be 21 Type-9 Records; the first one will present the matched minutiae of the searched image and the remaining Records will be those of the candidates returned. For multi-latent searches, there will be Type-9s for each probe image, distinguished by finger position. There can be up to 10 Type-9s for the probe, followed by the candidate Type-9s.

For latent records from the ULF, the latent record's Subject Identifier (2.2033A UCN) will be returned. If the Image Type (2.2033D IMT) information item indicates a latent image, then the UCN information item of the CNL field is a latent UCN for that candidate.

If there are matches from multiple events for a given Subject Identifier (2.2033A UCN) in the candidate list, the Biometric Set Identifier (2.2033C BSI) for each of these events will be listed in the CNL. This additional information is to enable retrieval of additional candidate biometric images via the IRQ. For each subject, only the highest-scoring image for a given finger, palm region, or supplemental region is returned within the SRL; for the additional events, no images/features are returned within the SRL.

The Name of Designated Repository (2.2033I NDR) information item contains the value for repository in which the candidate resides, when latent search requests specify only SPCs to be searched. It will be populated with the SPCs the candidate resides in from those SPCs actually searched. The Status/Error Message (2.060 MSG) field reports when the latent search request specified repositories that contained both known and unsolved records. The text states which records (known or unsolved) and repositories were not searched. The order of precedence for searching based on requested NDR is as follows:

1. Criminal and/or Civil is present then search known records
2. Criminal and/or Civil is not present and ULF is present then search unsolved records
3. Criminal and/or Civil and ULF are not present and at least one SPC contains known, then search known records

When designated repositories are not searched or partially not searched, this message will be in the first occurrence of the MSG field. When images, candidate features and matched minutiae are being returned, the MSG field will also contain the text: "This match was made using information beyond feature data." to alert users that the NGI matcher improves accuracy by use of additional imagery data.



### **3.4.3 Latent Penetration Query (LPNQ)**

The Latent Penetration Query (LPNQ) allows the user to check search parameters to ensure that a Latent Friction Ridge Investigation search does not exceed the maximum penetration recommended by FBI/CJIS of 50 percent. Penetration tables developed by the NGI LFR system may be used as an aid to help the user determine expected penetration. This transaction applies only to a single finger, even if the original transaction included multiple fingers.

The LPNQ contains the search parameters in a Type-2 Record. The search parameters can contain NDRs, biographic descriptors (DOB, RAC, SEX, GEO and POB), fingerprint classification, and fingerprint/palm print position code data. If values are other than Criminal or Civil are provided for NDR, then a penetration value for the Criminal repository is returned based on the rest of the search criteria.

#### **3.4.3.1 Latent Penetration Query Response (LPNR)**

The response to a penetration query will contain the estimated size for the repository search based on the transaction-defined characteristics. The response will indicate the ratio of penetration to allow further refinement of the search criteria.

The Penetration Query Response (2.078 PEN) field contains a penetration ratio as determined by the search criteria in the LPNQ request. The penetration value returned in the PEN field will be a combined ratio of the repositories specified in the LPNQ request. SPC(s) and ULF are not considered (see LPNQ above).

#### **3.4.3.2 Latent Transaction Error (ERRL)**

This transaction is returned by the FBI/CJIS in response to a transaction that contained errors, missing or inadequate quality fingerprints, missing mandatory information, or invalid contents. The Status/Error Message (2.060 MSG) field shall include additional information on the causes for the rejection. Error responses are described in the Error Message Format Section (Appendix M).

### **3.4.4 Latent Administrative Queries, Requests, and Responses**

Administrative requests can be solicited by the users to improve the accuracy and efficiency of their latent operations by gaining insight into the composition of the FBI/CJIS search repositories for use in search filtering. The Latent Repository Statistics Query (LRSQ) provides the users with the statistical representation of the FBI/CJIS Criminal and/or Civil Master File used to estimate search penetration.

The following Types of Transactions (TOTs) are included in the Latent Administrative Queries:

<b>TOT</b>	<b>TRANSACTION</b>
LRSQ	Latent Repository Statistics Query

The following are the responses to the above transactions:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
LRSR	Latent Repository Statistics Response
ERRA	Administrative Error Response

#### **3.4.4.1 Latent Repository Statistics Query (LRSQ)**

The Latent Repository Statistics Query (LRSQ) requests the current statistics used to estimate the penetration of the Criminal and/or Civil Repository by a latent search based on the various input characteristics. This query will provide the users the data used to estimate the repository penetration of a latent search without having to use the Latent Penetration Query.

#### **3.4.4.2 Latent Repository Statistics Response (LRSR)**

The Latent Repository Statistics Response (LRSR) to the LRSQ will provide the users the data required to estimate the repository penetration of a particular latent search. The ASCII file contained in the Repository Statistics Response (2.065 RSR) field will contain the parameters used to filter searches of the NGI (civil and criminal) repositories. Data will be returned for the civil and criminal files individually, as well as for the civil and criminal files in total. Statistics will not be generated for the ULF or SPC(s).

#### **3.4.4.3 Administrative Transaction Error (ERRA)**

This transaction is returned by the FBI/CJIS to indicate a transaction error. It includes a Status/Error Message (2.060 MSG) field indicating the type of error detected. Error responses are described in the Error Message Format Section (Appendix M).

### **3.4.5 Biometric Investigation Submission**

In addition to the FBI/CJIS accepting other biometrics in conjunction with Tenprint Fingerprint Identification Submissions and enrollment of other biometrics NGI also accepts additional biometric modality investigation searches.

#### **3.4.5.1 Photo Investigation Submission**

Conducting investigative photo searches against the NGI database may be accomplished using one of three methods. The Text Based Photo Search will employ biographic/demographic data as the search criteria to retrieve an unranked list of possible candidates and their most recently taken frontal face photo. The Text Based SMT Search will consist of using biographic/demographic data and SMT descriptors (e.g. 2.026 SMT, 2.2058 SMD) to find an unranked list of possible candidates and their SMT photos. The Facial Recognition Search will consist of comparing features from a probe photo against the gallery of photos and corresponding face features in the NGI database.

The following Types of Transactions (TOTs) are included in the Photo Investigation Submissions:

<b>TOT</b>	<b>TRANSACTION</b>
TXTSRCH	Text Based Photo/SMT Search Request
FRS	Facial Recognition Search Request

The following are the responses to the above transactions:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
SRB	Search Results Biometric
ERRB	Biometric Search Error Response

#### 3.4.5.1.1 Text Based Photo/SMT Search Request (TXTSRCH)

This transaction will allow the user to specify biographic/demographic data along with Scar, Mark, and Tattoo (SMT) descriptive data to be used in a search for investigative leads and return facial or SMT photos, based on the Image Type (2.062 IMT) specified in the request. The TXTSRCH transaction is typically used to generate photo lineups of criminal subjects that have physical characteristics (i.e., skin tone, hair color, eye color, sex, SMT specific characteristics, etc.) similar to a criminal suspect. If repository is omitted, then criminal is default. If the Number of Candidates Returned (2.079 NCR) field is omitted, then the default maximum number of candidates returned will be 99. If the Number of Images Requested (2.2010 NIR) is omitted, then the default number of images returned will be 20. The returned Candidate Investigative List (2.2033 CNL) will contain an unranked list of possible candidates.

#### 3.4.5.1.2 Facial Recognition Search Request (FRS)

The Facial Recognition Search (FRS) transaction allows the user to submit an investigative search of a frontal (both eyes visible) facial photo. The face image and optional demographic filtering information is searched against photos in the NGI repositories for possible candidates. It is important to note that if demographic fields are provided, then the search results will only contain candidates that match the entire set of demographics provided. The returned Candidate Investigative List (2.2033 CNL) will contain a ranked list of possible candidates as with latent fingerprint searches, the user may add the probe photo to the unsolved photo file (UPF) by setting the Unsolved Latent File (2.083 ULF) flag to “Y”.

Information derived from Facial Recognition Search Requests and resulting responses are to be used only as investigative leads. Though there are expected to be similarities between submitted images and candidate lists, results shall not be considered to be positive identifications nor considered to have active warrants. Although the emerging technology of facial recognition has made great strides over the years, facial recognition initiatives are not deemed to provide positive identifications and the Parties are prohibited from relying solely on SRB search responses as the sole impetus for law enforcement action: other indicators and factors must be considered by the submitting agency prior to making identification.

#### 3.4.5.1.3 Search Results Biometric (SRB)

This transaction is returned by FBI/CJIS in response to investigative searches that are not friction ridge based, such as FRS or TXTSRCH. The Search Results Biometric (SRB) response includes a Candidate Investigative List (2.2033 CNL) of Subject Identifiers (2.2033A UCN) up to the number specified in the Number of Candidates Returned (2.079 NCR) field of the search message. The SRB also includes corresponding number of biometric images, up to the value of the Number of Images Requested (2.2010 NIR) field presented in the request, or 20 images if NIR is omitted. It is important to note that the same subject may appear on the candidate list multiple times, as the CJIS/NGI repository is a multi-event repository.

If NCR was omitted in the search, the default behavior is to return up to 20 ranked or unranked candidates, depending on the search type. The number of candidates returned may be less than the specified NCR as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches. Additional biometric images on file for each candidate may be retrieved through separate Subject Photo Requests (CPRs) or Image Requests (IRQs).

If there are no candidates available, an SRB will be returned with NCR set to “0”.

#### 3.4.5.1.4 Biometric Search Error Response (ERRB)

A Biometric Search Error (ERRB) transaction is returned to the submitting agency when a non-friction ridge investigative transaction is rejected by the system or when there is a system error. Each reason for rejection will be detailed in the Status/Error Message (2.060 MSG) field. MSG will contain up to 11 error descriptions relating to the specific discrepancies identified (See Appendix M).

#### 3.4.5.2 Iris Image Investigation Search Submission (Future Capability)

Iris Image Investigation Search Submissions allow the user to submit a one-to-many investigation search against the FBI/CJIS Iris Identification File (IIF) using an Iris image(s) as the search probe. As opposed to an identification search, the iris investigation search results consist of a list of candidates that must be adjudicated by the user.

The following TOT will be accepted by the FBI/CJIS for Iris Image Investigation Search Submissions:

<b>TOT</b>	<b>TRANSACTION</b>
IIS	Iris Image Investigation Search

The FBI/CJIS' responses to electronic submissions will provide search results or indicate an error via the following TOTs:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
SRB	Search Results Biometric
ERRB	Biometric Search Error Response

#### 3.4.5.2.1 Iris Image Investigation Search (IIS) (Future Capability)

The Iris Image Investigation Search (IIS) transaction allows the user to submit the right and/or left iris images (both eyes preferred) for a given individual to be used for searching against the IIF for possible investigative leads. Such iris images may be extracted from a visible light facial photo obtained under less than ideal conditions, such as iris images from photos extracted from video surveillance footage. Subsequently, images submitted with an IIS transaction are likely to be of relatively poor quality. All IIS searches of the IIF will be one-to-many investigative type searches. An IIS transaction will result in up to the 20 best scoring candidates returned in an SRB transaction. The enrolled iris image(s) associated with each candidate will be returned. If the IIS contains any errors, an ERRB will be returned.

Iris image search functionality is currently in the pilot phase. Therefore, the IIS is a limited use TOT that requires coordination with FBI/CJIS prior to use.

### 3.4.6 Biographic Investigation Submission

The Biographic Investigation Submissions are used to perform investigative searches using the subject's biographic data instead of biometric data. The changing political and social climate necessitates the development of a process to ensure that people attending large public functions, such as the G8 Summit or a political convention, are not associated with terrorist or criminal organizations. The development of the retrieval of a subject's history via a biographic search provides a means to efficiently screen large numbers of people. This function is available on a limited basis to federal agencies with prior written authorization from the FBI.

See Appendix B for details of the Type-1 Record, Appendix C for details of the Type-2 Record, and Table D-3 for a complete list of all mandatory and optional data for Biographic Investigation Submissions.

The following TOT is applicable to these biographic search submissions to the FBI/CJIS:

<b>TOT</b>	<b>TRANSACTION</b>
EQHR	External Query History Request

The following are the responses to the above transaction:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
EHRR	Electronic History Request Response
EQRR	External Query History Request Response – Summary
EQER	External Query History Error Response
ERRR	Transaction Error (Electronic Response)

#### **3.4.6.1 External Query History Request (EQHR)**

The External Query History Request (EQHR) submission requires that the subject's name, place of birth, and date of birth be submitted. A more accurate candidate list is compiled if the biographic search is performed with more criteria. Therefore, optional data, such as hair/eye color, height or weight may be submitted. External History Queries will have a transaction priority level of 6, which is considered "secondary". (See Appendix A)

#### **3.4.6.2 External Query Request Response (EQRR)**

An External Query Request Response (EQRR) will be returned containing the summary list of zero to twenty candidates that were found as result of the External Query History search.

#### **3.4.6.3 External History Request Response (EHRR)**

For each candidate returned in the EQRR, a separate External History Request Response (EHRR) is returned, if requested. If no candidates are returned in the EQRR, no EHRR messages will be returned to the contributor. Each EHRR message will contain an Identity History Summary for a candidate returned in the summary report.

#### **3.4.6.4 External Query Error Response (EQER)**

When the External Query History Request contains errors, such as missing mandatory information or invalid contents, the External Query Error Response (EQER) will be returned to the contributor. The response will include the Status/Error Message (2.060 MSG) field indicating the type(s) of error(s) encountered. See the Error Message Format Section for more detail on how this response is formatted. (Appendix M)

#### **3.4.6.5 Transaction Error (Electronic Response) (ERRR)**

When the result of the External Query History Request contains candidate(s) where the Identity History Summary is not available, the Transaction Error (Electronic Response) (ERRR) will be

returned to the contributor. As a large number of records for persons born before 1956 have not been automated, those Identity History Summaries will not be available. The ERRR will include a Status/Error Message (2.060 MSG) field indicating the status of the record. The record will be converted. In three to four business days, the contributor may submit a follow-on EQHR request to receive the Identity History Summary electronically.

### 3.5 Notification Service

The Notification Service provides agencies with unsolicited notifications from the system based on triggering event criteria. An unsolicited notification may be triggered by functions initiated by the system, Authorized FBI Service Providers, or Authorized Contributors. One of the functions that may trigger these notifications is the cascaded searches from identification and investigative searches. Another triggering event may be the update of an Identity History record. Since these notifications are triggered by events other than submissions, the TCR (1.010) field will not be populated for these messages. Appendix E provides a summary of the Notification Service transactions with the Type-2 fields that are optional and mandatory. Appendix C contains the detailed information for each of the Type-2 fields.

NGI's unsolicited notifications are as follows:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
RBN	Rap Back Activity Notification
RBRN	Rap Back Renewal Notification
UHN	Unsolicited Hit Notification
ULM	Unsolved Latent Match
UULD	Unsolicited Unsolved Latent Delete

#### 3.5.1 Unsolved Latent Match (ULM)

An Unsolved Latent Match Notification (ULM) is sent to the owner of an unsolved latent record when newly submitted criminal, civil, or latent friction ridge searches match the unsolved latent case image. A ULM will occur after a Biometric Decision submission of an identification decision from a search of the ULF. The contributor should use the SCNA, CIN/CIX, and ATN fields to aid in the association of their original submission with this notification.

The CIN, CIX, ATN, SCNA, and CRI fields are associated with the unsolved record while the FBI, NAM, AKA, POB, CTZ, DOB, SEX, RAC, SMT, HGT, WGT, EYE, HAI, PPA, PHT, DPR, MSG, FGP, BSI, PPD, and BIA fields are associated with the identity or submission that hit against the unsolved record.

The Biometric Image Available (2.2031 BIA) field is included to reflect the available biometric image types available for the enrolled Identity that matched the latent. Depending on availability, the existing Subject Control Number (2.086 SCNA) field is populated with the legacy SCNA or with the FBI Number/UCN (UCN) value for the ULF latent that matched.

The ULM will return the complete image set that was matched against the Unsolved Latent File. If the submission that triggers the ULM is not to be retained by NGI, the images associated with that submission will be returned in the ULM (up to 14). The owner of the unsolved latent case is responsible for conducting the comparison.

### **3.5.2 Unsolved Biometric Match (UBM)**

These notifications are sent to the owner of an unsolved biometric image when a newly submitted biometric is a potential match to an unsolved biometric image. An Unsolved Biometric Match (UBM) will also occur after a positive Biometric Decision submission from the directed search of an unsolved file, when the requestor does not own the unsolved candidate record. The UBM will include the FBI Number/UCN (2.014 UCN) and the biographic identifiers associated with the subject that matched the unsolved image. Within the UBM transaction, the Biometric Image Available (2.2031 BIA) field reflects the available biometric image types for the candidate identity, the Biometric Set Identifier (2.2029 BSI) field uniquely identifies the matching biometric, and the Image Type (2.062 IMT) field indicates what type of biometric set matched the unsolved record.

### **3.5.3 Unsolicited Unsolved Biometric Delete (UUBD)**

This transaction is used to indicate that a record has been deleted from one of the FBI/CJIS's unsolved biometric files. An automated delete occurs when an attempt is made to add a record to an unsolved biometric file that contains the maximum number of allowable records. The record deleted will be the oldest record in the file. The FBI Number/UCN (2.014 UCN) field is populated with the value for the unsolved identity. The contributor should use the UCN, Contributor Case Identification Numbers (2.010 CIN/2.011 CIX), and Attention Indicator (2.006 ATN) fields to aid in the association of their original submission with this notification.

### **3.5.4 Unsolicited Unsolved Latent Delete (UULD)**

This transaction is used to indicate that a record has been deleted from the FBI/CJIS's ULF by the LFR system. An automated delete occurs when an attempt is made to add a record to the ULF file (or sub-file) which contains the maximum number of allowable records. The record deleted will be the oldest record in the file/sub-file. If a set of unsolved latent images were added from a multi-finger latent search, the UULD applies to the entire set of images added. Depending on availability, the existing Subject Control Number (2.086 SCNA) field is populated with the legacy SCNA or with the FBI Number/UCN (2.014 UCN) value for the ULF latent. The contributor should use the SCNA, Contributor Case Identification Numbers (2.010 CIN/2.011 CIX), and Attention Indicator (2.006 ATN) fields to aid in the association of their original submission with this notification.

### **3.5.5 Rap Back Activity Notification (RBN)**

When a Triggering Event occurs, a Rap Back Activity Notification will be sent to the Rap Back Subscription Owner. The information provided in the Rap Back Subscription will determine the type of notification agencies receive.



The triggering events which will cause a Rap Back Activity Notification to be sent are also specified as part of the Rap Back Subscription. NGI will provide a Rap Back Activity Notification for all Subscriptions regardless of the set triggers for the following conditions:

- Consolidation may trigger a Rap Back Activity Notification for any of the Identities involved in the consolidation. The triggering event information will include a list of the UCNs for the consolidated Identities
- Identity Deletion
- Identity Restoration

Agencies may opt out of receiving in-state notifications from the NGI's Rap-Back Service; the default behavior is to send all events based on the selected triggers regardless of the source of the event.

The Rap Back Activity Notification format is indicated within the transaction that establishes the Rap Back Subscription. A Rap Back Activity Notification may be one of three formats, Pre-Notification, Triggering Event, or Identity History Summary with Triggering Event.

### **3.5.6 Rap Back Subscription Renewal Notification (RBRN)**

The FBI/CJIS will send a Rap Back Renewal Notification to the Rap Back Subscription Owner prior to the designated expiration date for each Rap Back Subscription, advising of the upcoming expiration of their Rap Back Subscription. The Rap Back Subscription Owner has the ability to extend the expiration date or renew the term subscription by sending a Rap Back Maintenance Request. The Rap Back Renewal Notification will include key Rap Back Subscription data in addition to the expiration date.

### **3.5.7 Unsolicited Hit Notification (UHN)**

For records in the RISC, an Unsolicited Hit Notification (UHN) will be provided to the owner of the RISC record when there is a hit (red RPIS response) against a highly probable candidate. For records outside of RISC (e.g., SPC, Supervised Release) the UHN will be provided when an identification is made against the contributor's biometric record (e.g., fingerprint, face photo, etc.). Only agencies that have signed up for this notification will receive this message type.

## **3.6 Data Management Service**

This new service will provide users with the ability to manage data within the NGI System. It allows users to add, delete, and modify data contained in the NGI System that is under their control. Appendix I provides a summary of the Data Management Service transactions with the Type-2 fields that are optional and mandatory. Appendix C contains the detailed information for each of the Type-2 fields.

### 3.6.1 Latent Image Maintenance Submission

An authorized contributor can transmit an Unsolved Latent Record Delete Request (ULD). The processing flow for electronic requests to delete unsolved latent friction ridge records is illustrated in Figure 5.

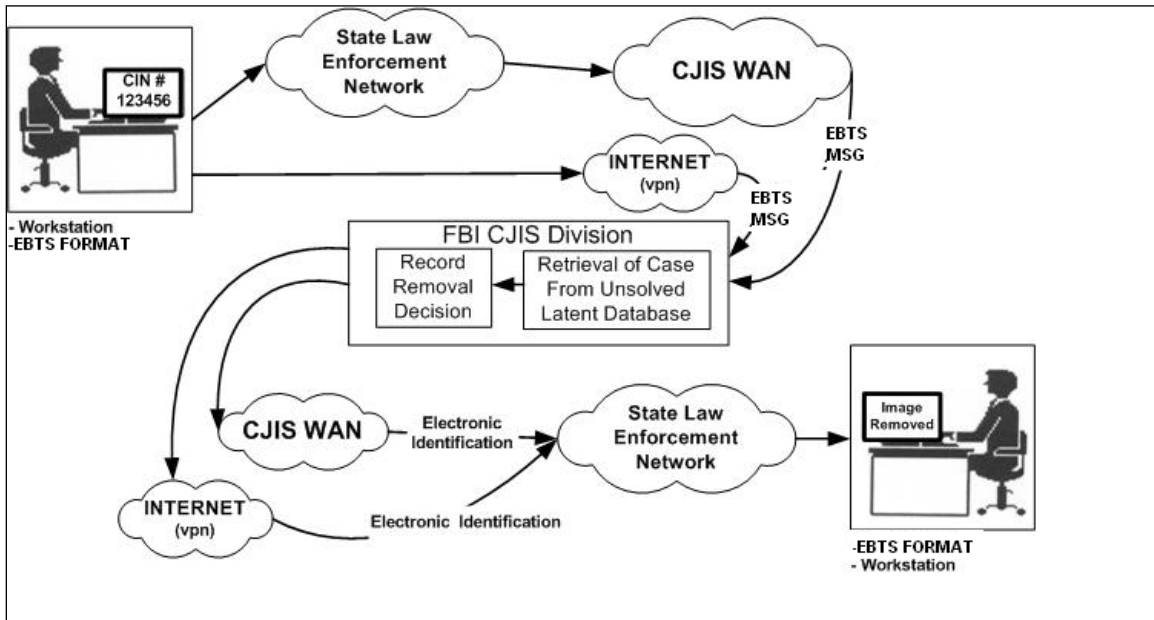


Figure 6 - Electronic Requests to Delete Unsolved Latent Friction Ridge Records

The following TOTs are latent file maintenance transactions transmitted to the FBI/CJIS:

TOT	RESPONSE TRANSACTION
ULD	Unsolved Latent Record Delete Request

The FBI/CJIS's responses to latent maintenance transactions are as follows:

TOT	RESPONSE TRANSACTION
ULDR	Unsolved Latent Delete Response
ERRL	Latent Transaction Error

#### 3.6.1.1 Unsolved Latent Record Delete Request (ULD)

The Unsolved Latent Record Delete Request (ULD) transaction is used to request that unsolved latent file records be removed from the FBI/CJIS's ULF. The identification numbers used to designate the latent record to be deleted are the Contributor Case Identification Numbers (2.010 CIN/2.011 CIX) and the Subject Control Number (2.086 SCNA) field. If a set of unsolved latent images were added from a multi-finger latent search, the ULD applies to the entire set of images

added. The existing SCNA field is populated with either the legacy SCNA value or the UCN of the latent record to be deleted.

### 3.6.1.2 Unsolved Latent Delete Response (ULDR)

This transaction is used to indicate that a record has been deleted from the FBI/CJIS's ULF in response to a ULD message. The Type-2 Record contents of the ULDR transaction can be viewed in Table I-1.

### 3.6.1.3 Latent Transaction Error (ERRL)

This transaction is returned by the FBI/CJIS to indicate a transaction error. It includes a Status/Error Message (2.060 MSG) field indicating the type of error detected. Error responses are described in the Error Message Format Section (Appendix M).

## 3.6.2 Fingerprint Image Submission

Fingerprint image update transactions are to be used particularly by states participating in the National Fingerprint File (NFF) when they obtain fingerprints from subjects already on file that are of substantially better quality or include different characteristics than the existing ones (e.g., a new scar). The new fingerprints are submitted to the FBI/CJIS for evaluation and inclusion in the FBI/CJIS files.

Fingerprint Image Submissions (FIS) will use a TOT of "FIS." All 14 fingerprint images must be accounted for in the update request to verify identification and finger sequence. The NGI system will determine whether to update the master fingerprint images. The processing flow for electronic requests to upgrade fingerprint images is illustrated in Figure 6.

The following TOTs are fingerprint image transactions transmitted to the FBI/CJIS:

<b>TOT</b>	<b>TRANSACTION</b>
FIS	Fingerprint Image Submission

The FBI/CJIS's responses to fingerprint image maintenance transactions are as follows:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
FISR	Fingerprint Image Submission Response
ERRI	Image Transaction Error

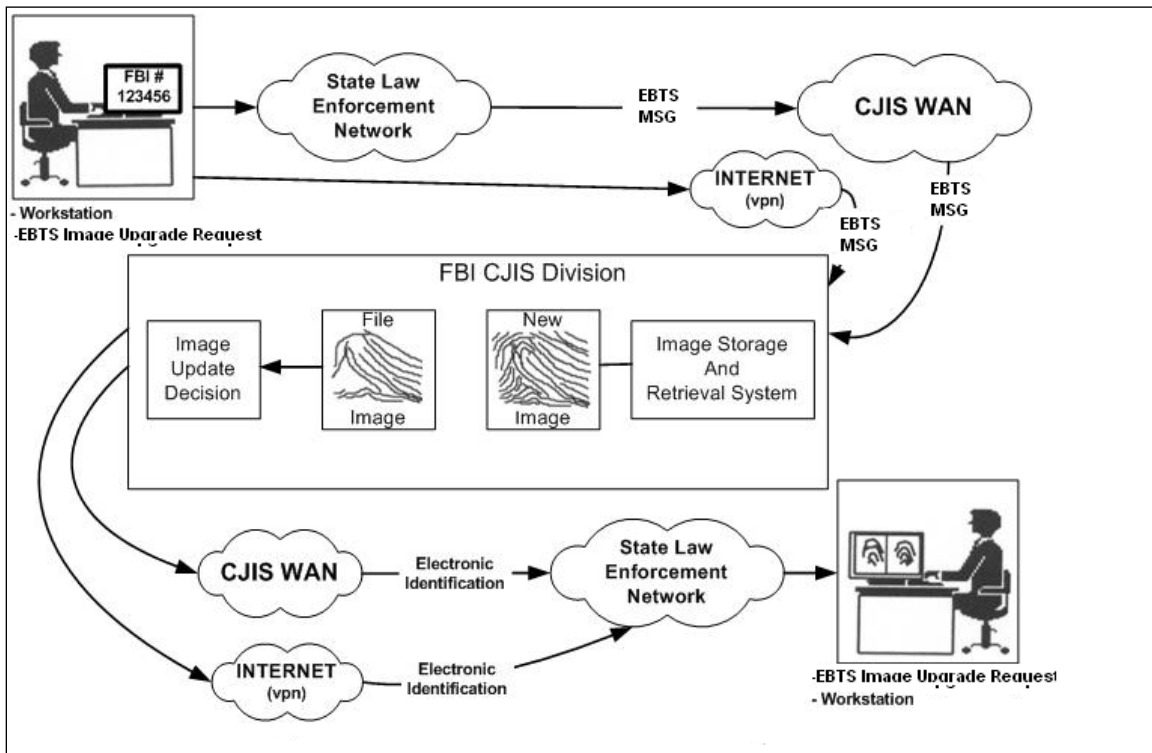


Figure 7 - Electronic Requests to Upgrade Fingerprint Images

### 3.6.2.1 Fingerprint Image Submission (FIS)

This transaction is used to submit electronic fingerprint images that are candidates for updating the FBI/CJIS fingerprint image files. It is intended primarily for use by NFF states when it is determined that a second or subsequent arrest provides fingerprints of significantly better quality than those previously submitted to the FBI/CJIS, or when it is determined there are new fingerprint characteristics such as scars or amputations. The transaction submits the new fingerprints to the FBI/CJIS for evaluation and possible inclusion in the FBI/CJIS files. All 14 fingerprints, rolled and plain, must be accounted for to verify the identification and confirm fingerprint positions. The FIS also supports the submission of Palm Print image sets, Supplemental Fingerprint and Palm Print image sets. Users will be allowed to submit multiple image sets in the same message. The FIS will allow users to submit image sets to be appended to an existing event or to add new image sets to an identity. The Event Identifier (2.2035 EVI) is used to allow the user to specify an event identifier from a prior event in order to append the new image sets.

### 3.6.2.2 Fingerprint Image Submissions Response (FISR)

This transaction is returned by the FBI/CJIS to acknowledge a valid FIS and specify which finger image(s) were updated. The Biometric Set Identifier (2.2029 BSI) is returned for

biometric sets enrolled with the FIS message. The FGP field continues to indicate which fingers are replaced for messages including fingerprints, but as composite biometric sets are not maintained for Palm Print and Supplemental Print sets no corresponding values are sent back from those biometric sets.

### 3.6.2.3 Image Transaction Error (ERRI)

This transaction is returned by the FBI/CJIS to indicate a transaction error. It includes a Status/Error Message (2.060 MSG) field indicating the type of error detected. Error responses are described in Error Message Format Section (Appendix M).

### 3.6.3 Biometric File Maintenance Submission

Biometric File Maintenance Submissions include transactions for enrolling into and deleting biometrics from a specified FBI/CJIS repository. When cascaded searches and investigative searches return possible matches, the user can submit a biometric decision notification for the purpose of identifying an unknown candidate.

The following TOTs are biometric transactions transmitted to the FBI/CJIS:

<b>TOT</b>	<b>TRANSACTION</b>
BDEC	Biometric Decision Submission
BDEL	Biometric Delete Request
CDEL	Civil Delete Request
FIS	Biometric Image Submission
RBSCRM	Rap Back Subsequent Subscription (Criminal)
RBSCVL	Rap Back Subsequent Subscription (Civil)
RBMNT	Rap Back Maintenance Request
SPMNT	Special Population Cognizant Maintenance Request

The FBI/CJIS's responses to biometric transactions are as follows:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
BDECR	Biometric Decision Response
BDELR	Biometric Delete Response
CDELR	Civil Deletion Response
FISR	Biometric Image Submission Response
RBSR	Rap Back Subscription Response
RBMNTR	Rap Back Maintenance Response
SPMNTR	Special Population Cognizant Maintenance Response

### **3.6.3.1 Direct Biometric Image Enrollment Transactions**

Direct biometric image enrollment transactions are used to add additional biometric imagery to an existing identity, when a search is not necessary. For example, a contributor may have a backlog of palm print images that they were unable to submit due to a system programming limitation. Once the system has been modified, the direct enrollment transactions allow for these palm prints to be added to the existing tenprint fingerprint events. The direct enrollment transactions allow for additional biometrics to be added to the existing identity record on file at FBI/CJIS.

#### **3.6.3.1.1 Special Maintenance Request (SPMNT)**

Biometric images may be submitted for enrollment into an SPC by using the SPC maintenance request with a Maintenance Action Indicator (2.2052 MAI) of “ADD”. SPC-only identities may be removed from the SPC by supplying the FBI Number/UCN (2.014 UCN) of the identity and the “DELETE” MAI value. For enrollment requests, FBI/CJIS will respond with a SPC maintenance response transaction (SPMNTR) to show successful receipt and storage of the images. If the images do not meet FBI/CJIS standards for searches, an error response (ERRA) will be returned to the user.

Biometric images may be removed from an SPC identity with a BDEL request containing the Name of Designated Repository (2.098 NDR), FBI Number/UCN (2.014 UCN) and Biometric Set Identifier (2.2029 BSI) values. Reference the BDEL description for further details.

#### **3.6.3.1.2 Special Maintenance Response (SPMNTR)**

CJIS will respond to the SPMNT with a Special Repository Maintenance Response (SPMAINTR) transaction to show successful receipt and storage of the images. The SPMAINTR will contain the identification information (e.g. UCN, BSI) to identify the biometrics for future use. If the images do not meet CJIS standards for searches, an error response (ERRA) will be returned to the user.

#### **3.6.3.1.3 Biometric Image Submission (FIS)**

The Biometric Image Submission (FIS) supports the enrollment of additional biometric imagery (i.e. palm prints, supplemental prints, photos (FACE and SMT), iris images) for an existing identity. The FIS must contain a set of tenprint fingerprint images for verification with the contributor provided FBI Number/UCN (2.014 UCN). FBI/CJIS will respond with a biometric image submission response (FISR) to indicate successful receipt and storage of the images. If the submitted fingerprints do not match the provided UCN, an error response (ERRA) will be returned to the user.

The submitted biometric images will be stored in the FBI/CJIS database for identification or investigative searching and will be associated with the provided Identity (UCN). Submitted

imagery will also be cascaded against the appropriate unsolved file (i.e. ULF, UPF) to support investigative services. When possible, users should include the Event Identifier (2.2035 EVI) from the associated (SRE) response, such that the additional biometric images may be associated with the existing EVI. The tenprint fingerprint images included in this transaction may be used to update the composite tenprint fingerprint images used in identification searching.

#### 3.6.3.1.4 Biometric Image Submission Response (FISR)

The Direct Biometric Image Enrollment Response (FISR) will provide details on each biometric type enrolled by a FIS. The Biometric Image Enrollment (2.2061 BIE) field will provide the Biometric Set Identifier (2.2061A BSI) and Image Type (2.2061B IMT) of each biometric set or photo that was enrolled. Where photos are enrolled, the Subject Pose (2.2061C POS) is populated for facial photos, and the scars, marks, and tattoos (2.2061D SMT) field is populated for SMT photos. If the fingerprints accompanying the FIS do not match the provided FBI Number/UCN (2.014 UCN), an error response (ERRA) will be returned to the user.

### 3.6.3.2 Biometric Deletion Transactions

#### 3.6.3.2.1 Biometric Delete Request (BDEL)

This transaction will allow the user to request deletion of a specific biometric set. This transaction will support Palm Print Deletion and Supplemental Print Deletion as a result of enrollments into the FRIF, and Unsolved Latent Deletion of prints from the ULF. BDEL also supports deletions of face and SMT photos from the Facial Identification File (FIF) and UPF. Only a record's owner can request its deletion. The owner is defined as the CRI who enrolled the biometric or the State Bureau for the CRI. The requestor will specify the appropriate identifier(s) of the image(s) to be removed. The FBI Number/UCN (2.014 UCN) and Biometric Set Identifier (2.2029 BSI) are used to specify the image set or photo being deleted. BDEL also supports the deletion of all photos for an event (e.g., an arresting event), to provide the same capability as the legacy CPD TOT. The EVI field has been added to the Type-2 record for purpose of deleting all photos for an event. To delete all facial and/or SMT photos for an event, the UCN and EVI must be populated. During the deletion of the photos for an event, the BSI will be omitted and the IMT may include facial or SMT photos only. The BDEL can be used against the ULF where three combinations are supported: FBI Number/UCN, CIN, and CIN/CIX. The deletions against the FRIF, FIF, UPF or ULF occur against all Identity Groups. The legacy ULD TOT continues to be supported to allow deletion of ULF entries using the case identifiers CIN and CIX, or SCNA.

#### 3.6.3.2.2 Biometric Delete Response (BDELRL)

This transaction is returned when a successful Biometric Delete Request was completed. If any permission or processing errors are encountered, an error transaction (ERRA) is returned. Since it is possible for more than one UCN to be deleted in a single BDEL transaction using the Case Identifiers CIN/CIX, the FBI Number/UCN (2.014 UCN) field will support up to 25 values. If more than 25 UCNs are deleted, it will be reported to the contributor in the Status/Error Message (2.060 MSG) field.

#### 3.6.3.2.3 Civil Deletion Request (CDEL)

The Civil Deletion Request updates the Identity History record by removing the requested civil event from the specified Identity. This transaction requires a valid UCN and a valid EVI. Additionally, the originator of the request must be the owner of this civil event.

#### 3.6.3.2.4 Civil Deletion Response (CDELRL)

This transaction is returned when a successful Civil Event Delete was completed. If any permission (e.g., submitter is not the owner of the image) or processing errors are encountered, an error transaction (ERRA) is returned. If a Rap Back Subscription is associated with the deleted event, it is deleted as well, and this information is reported in the MSG field of CDELRL.

#### 3.6.3.2.5 Subject Photo Delete Request (CPD) and Response (PDR)

These transactions enable users to delete a specific photo set associated with a Date of Arrest (2.045 DOA). Only the owners of a photo set may delete it. The requester specifies the FBI Number/UCN of the subject and the DOA, or a subject record identifier. If the request contains any errors, the Response Code (2.082 REC) field will be set to "N". The Subject Photo Delete Response (PDR) will be returned including the reason for the rejection in the Response Explanation (2.080 EXP) field.

#### 3.6.3.3 Biometric Decision Submission (BDEC)

This transaction notifies FBI/CJIS of a decision for a potential match resulting from a cascaded search (ULM or UBM) or from an investigative search (SRL or SRB). The BDEC will include the unique identifier (BSI for face searches or BSI-FGP for friction ridge searches) of the biometric against which the decision is made, along with the nature of the decision. BDECs will be used to track and analyze FBI/CJIS investigative service performance to identify possible improvements. To aid in the capture of these statistics, the TCR (1.010) field in the Type-1 record of the BDEC shall contain the control number (TCN 1.009) from the transaction (ULM/UBM or SRL/SRB) containing the candidate information from which this decision is being made.

Unless the ULR (2.2034) field is set to "Y", a BDEC indicating a positive identification will usually result in the unsolved record being removed from the ULF or UPF. However, when the BDEC is the result of a directed search of the ULF or UPF, the latent record in the ULF/UPF is not deleted, and a ULM/UBM notification is triggered to the owner of the matching unknown record.

#### 3.6.3.4 Biometric Decision Response (BDECR)

This transaction is returned when a successful Biometric Decision Submission was completed. If any permission or processing errors are encountered, an ERRA transaction is returned. Therefore, receipt of the Biometric Decision Response indicates the decision submission was successful. If the decision is a positive identification and the matched candidate is a latent, the MSG field will indicate if the latent was deleted.



### **3.6.4 Disposition File Maintenance Submissions (DSPE/DSPR)**

The Disposition File Maintenance Submission request (DSPE) allows an authorized contributor to add disposition data, to replace existing disposition data, to append to existing disposition data, or to delete disposition data on an existing arrest. The electronic Disposition Response (DSPR) will be sent back to the requestor and will be based on whether the transaction is processed as submitted. The DSPR will contain a FBI/CJIS transaction control number (TCN) from the submission, the submitted biographical data, and response information. The response information may be “Record Updated” if the record is successfully updated with the submitted CSL, “Manual Processing Required” if subsequent analysis of the submitted CSL is necessary, or “Rejected” and the reason for rejection listed. The response information will be contained in the Action to be Taken field (2.071 ACN) of the DSPR. Reject responses for DSPE requests due to transaction formatting or field constraint errors will be via the ERRT TOT.

### **3.6.5 Supervised Release Notification Request (SRNR)**

This transaction consists of a Supervised Release Notification Request submission that will be directly routed to a FBI/CJIS internal log application for special processing. This submission data will be used to update the Identity History record by associating supervisory information to an arrest cycle. The Supervised Release Notification Request Service allows an Authorized Contributor to submit supervisory maintenance requests to the FBI/CJIS electronically. This functionality includes the capability to cancel the transfer of a supervisory information request to another supervisory agency. A response will only be sent to the submitter if there is an error.

Note: SRNR is a limited-use TOT that requires coordination with FBI/CJIS prior to use.

### **3.6.6 Rap Back File Maintenance Submission**

The Rap Back Service includes subscription and maintenance transactions to provide for directly establishing criminal and civil subscriptions and to renew, update, or cancel Rap Back Subscriptions.

To submit a Rap Back Subscription Request, the submitter must have prior authorization from the FBI/CJIS. In order to establish a Rap Back Subscription using the Rap Back Subscription Request, the Authorized Contributor must be authorized to subscribe that Identity (UCN) in Rap Back as detailed below, which may require fingerprints.

#### **3.6.6.1 Rap Back Subsequent Subscription Request – Criminal (RBSCRM)**

For an existing individual with fingerprints on file with the FBI/CJIS, agencies may request Rap Back Services to be provided without resubmitting fingerprints by providing a valid UCN.

Any authorized agency may establish a Criminal Rap Back Subscription by submitting a criminal UCN, and the Name (NAM) and Date of Birth (DOB) of the Subscription subject. The OCA and Rap Back Category (RBC) also must be indicated. The allowable criminal Rap Back Categories are:

**Table 4 Rap Back Subscription Request Code Values**

Rap Back Code Value	Rap Back Category Code Description
CI	Criminal Justice Investigative
CS	Criminal Justice - Supervision

### 3.6.6.2 Rap Back Subsequent Subscription – Civil (RBSCVL)

Any authorized agency may establish a Civil Rap Back Subscription by submitting a criminal or civil UCN and either a full Tenprint Fingerprint image set or an Event Identifier (EVI) from a previously submitted Civil Tenprint Fingerprint Identification Search. A Subscription also requires the Name (NAM), and Date of Birth (DOB) of the Subscription subject, the Subscription Rap Back Category and the Civil Rap Back Subscription Term. Allowable Civil Rap Back Categories are as follows:

**Table 5 Rap Back Subsequent Subscription Code Values**

Rap Back Code Value	Rap Back Category Code Description
F	Firearms
I	Volunteer, Child Care/School Employee, Non-Criminal Justice Employment and Licensing
J	Criminal Justice Employment
S	Security Clearance Information Act (SCIA)

The Civil Rap Back Subscription Term may be two years, five years or lifetime. All subscriptions require the Rap Back Expiration Date to be set, in order to establish the Subscription validation period.

### 3.6.6.3 Rap Back Subscription Response (RBSR)

This transaction is the response to a Rap Back Subsequent Subscription Request. It will include all Subscription Data Fields to ensure the subscriber is aware of any system modifications that were made to the Subscription. The response will indicate whether the transaction succeeded, failed, or succeeded but with changes, with an indication of the field changed. The Identity History Summary is always returned in the response to a Civil Rap Back Subscription request due to the potential occurrence of criminal activity after the initial Tenprint Fingerprint Identification Search, during the adjudication process. The Identity History Summary is returned in the response to a Criminal Rap Back Subscription request, if requested.

### 3.6.6.4 Rap Back Maintenance Request (RBMNT)

The Rap Back Service provides the opportunity for authorized agencies to modify, renew, or delete Rap Back Subscription information. A Rap Back Subscription can be updated or renewed using the Rap Back Maintenance request. This transaction allows a Rap Back Subscription Owner to modify or delete their Rap Back Subscription record information. Both the UCN and Rap Back Subscription Identifier (2.2048 RBSI) are required. Rap Back Maintenance can be performed on expired or cancelled Subscriptions for a configurable time period after the expiration date or cancellation date.

The following Rap Back Subscription data may be modified:

- Biographic Data – Subscription Name and Subscription DOB
- Rap Back Activity Notification (RBNF) Format
- Rap Back Opt Out in-state Indicator (RBOO)
- Rap Back Attention Indicator (RBATN)
- Rap Back Expiration Date (RBXD)
- Triggering Event(s)
- Rap Back Recipients (RBR)
- User Defined Fields (up to 10)
- Indicator to include Criminal Rap Back Subscription information on the Identity history summary, when provided for Criminal Justice Purposes

The type of Rap Back Maintenance the Rap Back Subscription Owner wishes to perform is signified by the Rap Back Maintenance Indicator (2.2039 RBMI), which supports the following values: Replace, Delete, Append, Cancel, Renew, and Un-cancel.

#### *Replace*

The matching Rap Back Subscription will be updated with Rap Back Subscription data provided in the request. Data fields that can be replaced: Name (2.018 NAM), Date of Birth (2.022 DOB), Rap Back Activity Notification Format (2.2062 RBNF), Rap Back Opt Out In-State Indicator (2.2063 RBOO), Rap Back Expiration Date (2.2015 RBXD), Rap Back Trigger (2.2040 RBT), Rap Back User Defined (2.2064 RBUD), Rap Back Recipient (2.2020 RBR), Rap Back Attention Indicator (2.2070 RBATN), and Rap Back Disclosure Indicator (2.2067 RBDI). Rap Back subscriptions with a non-lifetime term must ensure that the replaced expiration date is on or prior to the Rap Back Subscription Term.

#### *Delete*

Any subscription data provided in the request will be removed from the matched Rap Back Subscription. If a required Rap Back Subscription Data field is provided with a Delete, the request will be rejected. The only Rap Back Subscription data that can be deleted is: Triggering Events, Rap Back Recipient, User Defined Field, Rap Back Attention Indicator.

#### *Append*

Provided data will be appended to the matched Rap Back Subscription. Data that can be appended: RBT, RBR, and RBUD.

#### *Cancel*

The matched Rap Back Subscription will be cancelled. The only Rap Back fields needed to cancel a Subscription are the UCN and the Rap Back Subscription Identifier. Any other data fields provided will be ignored. If the Subscription has already been cancelled or expired, the request will be rejected with the response that an active Rap Back Subscription does not exist for the UCN/Rap Back Subscription Identifier.

#### *Renew*

Renew is only applicable for Rap Back Subscriptions with a Civil Rap Back Category and a non-lifetime term; the matching Rap Back Subscription will be renewed for another term (e.g., if the original subscription term was two years, then the expiration date should be extended two years).

A Subscription with a lifetime term must use the “Replace” maintenance indicator to extend the expiration date.

The Rap Back fields needed to renew a Subscription are the UCN, Rap Back Subscription Identifier, and Expiration Date. The expiration date must be on or prior to the new Rap Back Subscription Term date and is used by the Subscriber for validation purposes.

#### *Un-cancel*

If a Subscription was erroneously cancelled, the Subscription can be un-cancelled for a configurable time period after the cancel date. The Rap Back fields needed to reactivate a cancelled Subscription are the UCN and Rap Back Subscription Identifier.

### **3.6.6.5 Rap Back Maintenance Response (RBMNTR)**

This transaction is returned by the FBI/CJIS in response to a Rap Back Maintenance Request. Responses will return the submitted fields, and indicate if the transaction completed successfully, failed, or completed with modifications.

For transactions renewing a Rap Back Subscription that is past the expiration date or reactivating a cancelled Subscription, an Identity History Summary will be included in the response due to the potential occurrence of criminal activity during the configurable time period.

### **3.6.7 External System Link Maintenance Submission**

The external system link maintenance submissions will provide the capability for an external system to modify their identifier associated with a UCN in the FBI/CJIS database. They will also provide the external system with the ability to report activity on a linked identity.

The following TOTs will be accepted by the FBI/CJIS for External System Link Maintenance Submissions:

<b>TOT</b>	<b>TRANSACTION</b>
XACT	External System Link Activity Request
XMNT	External System

The FBI/CJIS’ responses to electronic submissions will provide maintenance results or indicate an error via the following TOTs:

<b>TOT</b>	<b>RESPONSE TRANSACTION</b>
XACTR	External System Link Activity Response
XMNTR	External System Link Maintenance Response
ERRA	Administrative Error Response

#### **3.6.7.1 External System Link Activity Request (XACT)**

The XACT notification is sent to FBI/CJIS by external identification systems (e.g., DHS IDENT) to notify FBI/CJIS of activity on an external subject identifier (2.2037 ESI) that is associated with an identity (UCN) within the FBI/CJIS repository. FBI/CJIS will use these external system notifications

to trigger notifications to authorized contributors that are subscribed to unsolicited notifications (e.g., Rap Back notifications).

XACT messages will be rejected and an ERRA returned if the 2.2037 ESI provided does not exist in the FBI/CJIS repository. This reject reason will be included in the MSG field of the ERRA when an XACT message is rejected.

### **3.6.7.2 External System Link Activity Response (XACTR)**

An XACTR is returned to the external system upon successful processing of an XACT request.

### **3.6.7.3 External System Link Maintenance Request (XMNT)**

The XMNT request is used by external identification systems (e.g., DHS IDENT) to add, delete or modify the external subject identifier (2.2037 ESI) that is associated with an identity (UCN) within the FBI/CJIS repository.

XMNT messages will be rejected and an ERRA returned for the following reasons:

1. The 2.2037 ESI provided is already associated with another UCN.
2. The specified UCN does not exist in FBI/CJIS repositories.

The reject reason will be included in the MSG field of the ERRA when an XMNT message is rejected.

### **3.6.7.4 External System Link Maintenance Response (XMNTR)**

An XMNTR is returned to the external system upon successful processing of an XMNT request.

## **3.7 Error Message Format**

When a transmission is rejected because a data field(s) does not pass internal editing criteria, an error response will be transmitted back to the submitting agency. Each reason for rejection will be detailed in the status/message (MSG) field. Up to 11 errors for a transaction can be recorded in the MSG field. MSG will contain an error description relating to the specific discrepancy identified. If the error is related to a field that contains invalid data, the field tag and first 30 characters of the data in the invalid field will be returned.

Errors in incoming transactions can be derived from many sources. FBI/CJIS error handling capabilities will be an evolutionary product. In its initial version, FBI/CJIS recognized and dealt with several hundred identified error conditions. Future updates to the FBI/CJIS system will develop improved capabilities that support off-nominal or error conditions.

FBI/CJIS will validate all incoming data prior to its use within the system. That is, all received and parsed fields will undergo an appropriate edit check. If any mandatory data are missing the transaction will be rejected. If any mandatory data are included but considered an error, then an attempt will be made to correct the values manually. If any optional data are in error, the data will not be stored in the FBI/CJIS repository.

The error response will be included in the ERRT, ERRA, ERRI, ERRL, ERRR or EQER transaction as appropriate. The following is a non inclusive list of the types of error messages:

- Mandatory field missing
- Invalid field for transaction
- Field discrepancy
- Field out of range
- Request not on file
- Fingerprints do not allow extraction of characteristics
- Non standard native-mode fingerprint characteristics

The following are five unique types of error responses:

- Tenprint Transaction Error Response (ERRT)
- Latent Transaction Error Response (ERRL)
- Information/Image Transaction Error Response (ERRI)
- Administrative Transaction Error Response (ERRA)
- Transaction Error (Electronic Response) (ERRR)
- External Query History Error Response (EQER)

Appendix M contains further details on contents of the MSG field for error conditions.

## **3.8 Other Special Requirements for Communicating With FBI/CJIS**

### **3.8.1 Electronic Fingerprint Images**

Electronic fingerprint images must be captured and transmitted to the FBI/CJIS in accordance with the standard for the electronic interchange of fingerprint information, the ANSI/NIST-ITL.

Tenprint images in EBTS transactions shall be in Type-4 (500ppi) or Type-14 (either 500ppi or 1000ppi) records. Exemplar palmprint images (including supplemental rolled thenar) shall be in Type-15 records (either 500ppi or 1000ppi). Supplemental finger images (exemplar lower joint and extreme tips) shall be in Type-14 records (either 500ppi or 1000ppi).

Latent images shall be transmitted in Type-4, Type-7, or Type-13 records. Latent finger images may be transmitted in Type-4 records if the images are 500ppi and are within the size requirements specified in Section 3.8.4. Latent finger or palm images of any size and either 500ppi or 1000ppi may be transmitted in Type-7 or Type-13 records.

### **3.8.2 Fingerprint Image Compression/Decompression Algorithm**

IAFIS-IC-00110(V3.1), Criminal Justice Information Services (CJIS) Wavelet Scalar Quantization (WSQ) Grayscale Fingerprint Image Compression Specification, dated October 4,

2010, provides the definitions, requirements, and guidelines for specifying the FBI/CJIS’s WSQ compression algorithm. The document specifies the class of encoders required, decoder process, and coded representations for compressed image data. Latent images are not compressed.

The specification provides an informative overview of the elements of the algorithm. Refer to it for details.

ISO International Standard 10918-1, Information Technology – Digital Compression and Coding of Continuous Tone Still Images Part 1: Requirements and Guidelines, commonly known as the JPEG (The Joint Photographic Experts Group) algorithm, has been requested for use by the UK Home Office in submitting fingerprint images to FBI/CJIS.

The FBI/CJIS is responsible for maintaining a registry of approved compression algorithms and assigning a value to each (see Table 3-5). This value is to be used in the Type 4 or Type-14 Logical Record so the receiving agency can use the appropriate decompression algorithm to decode the image data. The Color and Grayscale Compression Algorithm (CGA) field is a mandatory one byte binary field used to specify the compression algorithm used (if any). A binary zero denotes no compression. The following table indicates the acceptable values for this field. The FBI/CJIS expects 500 ppi scanned Type-4 or Type-14 tenprint images, as well as 500 ppi Type-15 palm print images, to be compressed with compression algorithm WSQ20 with a nominal compression ratio of 15-to-1. The FBI/CJIS expects 1000 ppi scanned Type-14 and Type-15 images to be compressed with compression algorithm JP2L and Type-10 photo images to be compressed with compression algorithm JPEGB. FBI/CJIS will accept fingerprint and palm print images scanned at 500 and 1000 ppi. No downsampling or transcoding of 1000 ppi images is to be performed prior to transmission to the FBI/CJIS. The table will be updated when new algorithms are approved by the FBI/CJIS.

**Table 6 Compression Algorithm Values**

Compression Algorithm	Binary Value	ASCII Code
None used (Uncompressed)	0	NONE
Wavelet Scalar Quantization (WSQ) FBI/CJIS Revision 2.0 WSQ Version 3.1 or higher is recommended (Version 2.0 or Version 3.0 may be used for platen areas less than 2 inches in height)	1	WSQ20
JPEG ISO/IEC 10918 (Lossy)	2	JPEGB
JPEG ISO/IEC 10918 (Lossless)	3	JPEGL
JPEG 2K ISO/IEC 15444-1 (Lossy)	4	JP2
JPEG 2K ISO/IEC 15444-1 (Lossless)	5	JP2L
Portable Network Graphics	6	PNG

### 3.8.3 Fingerprint Image Quality Specifications

The IAFIS Image Quality Specifications are provided in Appendix F.

### 3.8.4 Fingerprint Image Size Requirements

The scanned fingerprint image sizes shown in the following table are consistent with standard fingerprint cards or common live-scan images. To accommodate live-scan equipment, where the platen size can exceed these measurements, FBI/CJIS will accept images larger than these. However, when oversize images are returned to a contributor, it is the receiver's responsibility to manage the display of these oversize images.

**Table 7 Maximum Sizes for Fingerprint**

<b>Fingerprint</b>	<b>Width pixels (inches)</b>	<b>Height pixels (inches)</b>
Rolled Impression Fingers 1-10 (@ 500 ppi)	800 (1.6)	750 (1.5)
Rolled Impression Fingers 1-10 (@ 1,000 ppi)	1,600 (1.6)	1,500 (1.5)
Plain Thumb Impression (@ 500 ppi)	500 (1.0)	1,500 (3.0)
Plain Thumb Impression (@ 1,000 ppi)	1,000 (1.0)	3,000 (3.0)
4 Finger Plain Impressions (@ 500 ppi)	1,600 (3.2)	1,500 (3.0)
4 Finger Plain Impressions (@ 1,000 ppi)	3,200 (3.2)	3,000 (3.0)



## **APPENDIX A: TRANSACTION RESPONSE TIMES**

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Table A-1 represents maximum response times for incoming electronic transactions. Table A-2 represents types of transactions by service. The 1.006 PRY field (see definition of PRY in ANSI/NIST-ITL) corresponds to the Priority column in Table A-1 for transactions which will process based on priority, and this field will be used to prioritize all transaction types, including investigative. If field 1.006 PRY is not provided, the transaction will process at "routine" (PRY = 5) priority. PRY is not applicable to transaction types with no values in the priority column of table A-1.

Table A-1: NGI Maximum Transaction Response Times provides a summary of the maximum response times by transaction type and priority. Some transactions have different priorities as indicated in the table.

**Table A-1 NGI Maximum Transaction Response Times**

Transaction	Priority	1 sec	5 sec	10 sec	20 sec	30 sec	2 min	5 min	10 min	15 min	30 min	1 hour	2 hours	4 hours	24 hours	48 hours	15 days
Criminal Fingerprint Identification Search	high (1)								•								
	routine (5)										•						
	low (7)														•		
	non-urgent (9)																•
Civil Fingerprint Identification Search	high (1)									•							
	routine (5)												•				
	low (7)														•		
	non-urgent (9)																•
Friction Ridge Investigation Search	high (1)					•											
	routine (5)						•										
	low (7)										•						
Biometric/Biographic Maintenance									•								
Biometric Audit Trail Retrieval									•								
Biometric Image Retrieval, multiple UCN																•	
Biometric Image Retrieval, single UCN								•									
Biographic Search							•										
Cascaded Facial Recognition Search															•		
Cascaded Fingerprint Search															•		
Cascaded Iris Search															•		
Cascaded Palmprint Search															•		
Cascaded Supplemental Fingerprint & Palmprint Search															•		
Disposition Fingerprint Search															•		
Disposition Maintenance															•		
Disposition Submission															•		
External Latent Print Search (generate)										•							
External Photo Image Retrieval (generate)										•							
Facial Recognition Search													•				

**Table A-1 NGI Maximum Transaction Response Times**

Transaction	Priority	1 sec	5 sec	10 sec	20 sec	30 sec	2 min	5 min	10 min	15 min	30 min	1 hour	2 hours	4 hours	24 hours	48 hours	15 days
Fingerprint Audit Trail Retrieval										•							
Identification Search Request (generate)										•							
Iris Search													•				
Latent Audit Trail Retrieval										•							
Link Maintenance from External										•							
Photo Image Retrieval, 1 UCN								•									
Provide Notifications								•									
Rap Back Enrollment										•							
Rap Back Subscription List Retrieval										•							
Rapid Fingerprint Identification Search, Identity info					•												
Rapid Fingerprint Identification Search, no Identity info				•													
Rapid Tenprint Fingerprint Identification				•													
Supplemental Fingerprint & Palmprint Maintenance										•							
Text-Based Facial Photo Search										•							
Text-Based SMT Photo Search										•							
Verification Request										•							

**Table A-2 NGI Type Of Transaction By Service**

<b>SERVICE</b>	<b>TRANSACTION</b>	<b>TOT</b>	<b>DESCRIPTION</b>
Identification Services	Criminal Fingerprint Identification Search	CAR	Criminal Tenprint Submission (Answer Required)
		CNA	Criminal Tenprint Submission (No Answer Necessary)
		CPDR	Criminal Fingerprint Direct Route
		CPNU	Criminal Fingerprint Processing Non-Urgent
	Civil Fingerprint Identification Search	AMN	Amnesia Victim
		DEK	Known Deceased
		DEU	Unknown Deceased
		DOCE	Departmental Order Channeling Electronic
		EMUF	Electronic In/Manual Out User Fee Submissions
		FANC	Federal Applicant (No Charge)
		FAUF	Federal Applicant User Fee
		FNDR	Federal No Charge Direct Route
		MAP	Miscellaneous Applicant Civil
		MPR	Missing Person
		NFAP	Non-Federal Advanced Payment
		NFUE	Non-Federal User Fee Expedite
	NFUF	Non-Federal Applicant User Fee	
	NNDR	Non-Federal No Charge Direct Route	
	Disposition Fingerprint Search	FDSP	Disposition Fingerprint Identification Submission
	Criminal Fingerprint Identification Search	FIDR	Foreign Information Direct Route
Iris Search	IIDS	Iris Identification Search	
Latent Search	LFS	Latent Fingerprint Image(s) Submission	
Rapid Fingerprint Identification Search	RPIS	Rapid Fingerprint Identification Search Submission	
Information Services	Biometric Image Retrieval	IRQ	Biometric Image/Feature Retrieval Submission
	Fingerprint Audit Trail Retrieval	BATQ	Biometric Audit Trail Retrieval Request
	Latent Audit Trail Retrieval	BATQ	Unsolved Latent Audit Trail Retrieval
	Palmprint Audit Trail Retrieval	BATQ	Palmprint Audit Trail Retrieval
	Photo Audit Trail Retrieval	BATQ	Photo Audit Trail Retrieval
	Biometric Image Retrieval	CPR	Subject Photo Request
	Rap Back Subscription List Retrieval	RBRPT	Rap Back Subscription List
	Biographic Search	RBIHS	Rap Back Identity History Summary
	Biographic Search	EQHR	External Query History Request
	Facial Recognition Search	FRS	Facial Recognition Search
Investigation Services	Fingerprint Investigation Search	TPIS	Tenprint Fingerprint Image Search
		TPRS	Tenprint Fingerprint Rap Sheet Search
	Latent Search	LFFS	Latent Friction Ridge Feature Search
		LFIS	Latent Friction Ridge Image Search
		LPNQ	Latent Penetration Query
		LRSQ	Latent Repository Statistics Query
	Text-Based Facial Photo Search	TXTSRCH	Text-Based Facial Photo Search
	Text-Based SMT Photo Search	TXTSRCH	Text-Based SMT Photo Search

**Table A-2 NGI Type Of Transaction By Service**

<b>SERVICE</b>	<b>TRANSACTION</b>	<b>TOT</b>	<b>DESCRIPTION</b>
Notification Services	Provide Notifications	RBN	Rap Back Activity Notification
		RBRN	Rap Back Renewal Notification
		SPC	Special Population Cognizant Notifications
		UBM	Unsolved Biometric Match
		UHN	Unsolicited Hit Notification
		ULM	Unsolved Latent Match Response
		UUBD	Unsolicited Unsolved Biometric Delete
		UULD	Unsolicited Unsolved Latent Record Delete
Data Management Services	Disposition Maintenance	DSPE	Disposition Reporting
	Fingerprint Maintenance	BDEC	Fingerprint Decision Request
		BDEC	Latent Decision Request
		CDEL	Civil Deletion Request
		FIS	Direct Biometric Image Enrollment Request
		FIS	Fingerprint Image Submission
		FISR	Direct Biometric Image Enrollment Response
		ULD	Unsolved Latent Record Delete
	Link Maintenance from External	XACT	External System Link Activity Request
		XMNT	External System Link Maintenance Request
	Palmprint Maintenance	BDEC	Palmprint Decision Request
		BDEL	Palmprint Deletion Request
		FIS	Direct Palmprint Enrollment
	Photo Maintenance	BDEC	Biometric Decision Submission
		CPD	IPS Original Photo Delete Request
		FIS	Biometric Image Submission
	Rap Back Maintenance	RBMENT	Rap Back Maintenance
		RBRN	Rap Back Subscription Renewal Notification
		RBSCRM	Rap Back Subsequent Subscription Request - Criminal
		RBSCVL	Rap Back Subsequent Subscription Request - Civil
	Fingerprint Maintenance	SPMNT	Special Population Cognizant File Maintenance
	Biometric Image Retrieval	CPR	Photo Set Retrieval Request
	Supplemental Fingerprint & Palmprint Maintenance	BDEC	Supplemental Fingerprint and Palmprint Decision Request
BDEL		Supplemental Fingerprint and Palmprint Deletion Request	
FIS		Direct Supplemental Fingerprint and Palmprint Enrollment	
Verification Services	Verification Request	FVR	Fingerprint Verification Request

Table A-2 shows the Types of Transaction (TOT) by service in relation to Table A-1. The transaction columns from each table link the two together.

## APPENDIX B: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-1 LOGICAL RECORDS

---

This appendix will contain the descriptions and field specification for the Type-1 logical record included with a transaction being submitted. Each transaction is required to have a Type-1 record. Each natively-encoded field shall begin with the number of the record type, followed by a period, followed by the appropriate field number, followed by a colon. Multiple information items within a field or subfield shall be separated by the  $U_s$  separator; multiple subfields shall be separated by the  $R_s$  separator; and information fields shall be separated by the  $G_s$  separator. Immediately following the last information field in the Type-1 logical record, an  $F_s$  separator character shall be used to separate it from the next logical record. The Type-2 record (defined in Appendix C) shall follow the Type-1 record. As NGI will be accepting this record as defined in the ANSI/NIST-ITL, refer to the ANSI/NIST-ITL for complete usage and descriptions of the Type-1 fields. Any information that is outlined below is an FBI-specific requirement for the Type-1 record.

The XML tag names have been added after the native naming of the mnemonic in bold/italics format.

## Type-1 Data Dictionary

The T-1 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard

**TOT 1.004 Type of Transaction.** *<ebts:TransactionCategoryCode>*

This mandatory field shall contain an identifier, designating the type of transaction and subsequent processing that this logical file should be given. When using the XML encoding, the sender must designate the Type of Transaction (TOT) in the *<ebts:TransactionCategoryCode>* element, located within the *<ebts:TransactionAugmentation>* element of the Type-1 Record, to specify which process is to be followed.

**DAI 1.007 Destination Agency Identifier** *<ansi-nist:TransactionDestinationOrganization>*

This mandatory field shall contain the identifier of the administration or organization designated to receive the transmission. The size and data content of this field shall be defined by the user and be in accordance with the receiving agency. This field shall be a nine-byte alphanumeric field. Must be an ORI.

**ORI 1.008 Originating Agency Identifier** *<ansi-nist:TransactionOriginatingOrganization>*

This mandatory field shall contain the identifier of the administration or organization originating the transaction. For EBTS purposes, this field shall be a nine-byte alphanumeric field. The first two characters shall be a valid POB code, and the entire ORI shall validate to an NCIC-authorized ORI. Note: In a submission to the FBI, the submitting agency (usually the CJIS Systems Agency (CSA)) is the ORI and the FBI is the DAI, while the FBI's response to the submission will show the FBI as the ORI and the submitting agency as the DAI. (See also Appendix C for the definition of CRI.)

**NTR 1.012 Nominal Transmitting Resolution**

For EBTS transactions, this mandatory field shall specify the nominal transmitting resolution for fingerprint images transmitted in Type-4 or Type-7 records. This field shall contain five bytes specifying the transmitting resolution in pixels per millimeter. The resolution shall be expressed as two numeric characters followed by a decimal point and two more numeric characters (e.g., 19.69). For Type-4 records, the transmitting resolution shall be 495-505ppi (500+-1%); for Type-7 records, the transmitting resolution shall either be 495-505ppi (500+-1%) or 990-1010ppi (1000+-1%). For transactions that do not contain Type-3 through Type-7 fingerprint image records, this field shall be set to "00.00". A single transaction can only contain multiple Type-4 and/or Type-7 records if all images have the same resolution.

**DOM 1.013 Domain Name**

## Type-1 Data Dictionary

This field will be required for all new implementations of the CJIS EBTS transactions. This mandatory field identifies the domain name for the user-defined Type-2 logical record implementation. If present, the domain name may only appear once within a transaction. It shall consist of one or two information items. The first information item will uniquely identify the agency, entity, or implementation used for formatting the tagged fields in the Type-2 record. An optional second information item will contain the unique version of the particular implementation. The default value when submitting native (SMTP) version to CJIS for the field shall be the North American Domain implementation and shall appear as “1.013:NORAM{US}EBTS #.# {GS}” where the #.# is the major and minor version number of the EBTS that is being used (e.g. 10.0). When submitting XML version to CJIS, the value for this field shall be the North American Domain implementation and shall appear as:

```
<ansi-nist:TransactionDomain>  
  <ansi-nist:DomainVersionNumberIdentification>  
    <nc:IdentificationID>EBTS 3.1</nc:IdentificationID>  
  </ansi-nist:DomainVersionNumberIdentification>  
  <ansi-nist:TransactionDomainName>NORAM</ansi-nist:TransactionDomainName> </ansi-  
nist:TransactionDomain>
```



## **APPENDIX C: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-2 LOGICAL RECORDS**

---

This appendix will contain the descriptions and field specifications for the Type-2 record being included with a transaction being submitted. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description. Entries have been shaded to designate the status of the entry: gray indicates Future Capability, blue indicates the field will be deprecated. Section 1 gives general information that will be applied to all fields listed in this appendix. Section 2 provides an alphabetic order of the fields being used in this record type giving the details of what is necessary to satisfy the requirements for the field. Section 3 contains the tables summarizing the fields in field number order.

### **1.0 User Defined Data**

Table C-1 summarizes the content of each of the fields in the Type-2 record in the native encoding format. The field sizes do not account for any separator characters. Some Type-2 elements have their origins as contributor-supplied data. User-defined data is that subset of contributor-supplied data that will not be stored in any CJIS files for later search or retrieval purposes. User-defined data will not be validated (with several exceptions), and therefore may in general consist of any printable 7-bit ASCII character: i.e., free text. This includes the ASCII (decimal) codes 07 (BEL) through 13 (CR) and 32 (SP) through 127 (DEL), inclusive. Separator characters are not part of the printable character set.

The following list gives those Type-2 elements that the FBI treats as being user-defined: ATN, SCO, OCA, SID, OCP, EAD, RES, CRI, IMA, CIDN, and TAA. In this list, SID, TAA, and CRI may not always be free-text. In criminal transactions, these fields must contain valid formats, as specified further in this appendix. Occasionally, other restrictions are specified as required in the data dictionary section. If the contributor supplies data in any of these fields in a submission or search, the data will be returned in the corresponding response.

The RAP, RET, REC, TAA, and ULF are examples of flag fields taking values of positive = “Y” and negative = “N.” The negative value should not, in general, be submitted unless otherwise described in a specific definition. For XML encoding, these are represented as Boolean values. New Geographic Locator fields (DATUM\_ID 2.307, GEO\_CORD 2.306, and GEO\_TIME 2.305) have been borrowed from the DoD EBTS and added to the CJIS EBTS with the following field tags: GEO\_TIME 2.2025, GEO\_CORD 2.2026, and DATUM\_ID 2.2027. Their use is to aid in facilitating the need for Mobile ID units to provide the location from which a set of images have been captured. The definitions have been added to the data dictionary along with Section 3.0 of this appendix and will be considered ‘Future Capability’ until the fields are implemented.

## 1.1 Date Fields

Date fields must be valid dates and in accordance with the requirements stated below. In general, the format for date fields is the following:

A date is shown as an 8-digit numeric field of the format CCYYMMDD, where:

CC (Century) must be 19 or 20

YY (Year) must be 00 to 99

MM (Month) must be 01 to 12

DD (Day) must be 01 to the limit defined by the month and year (e.g., DD may be 29 for MM = 02 in leap years).

For example 19921201 represents December 1, 1992.

Since dates find a variety of uses in EBTS transactions, each use may have specific format restrictions or special edits. For specific format restrictions or special edits, see the individual date field entries in this appendix.

## 1.2 XML Encoding

In the Type-2 Data Dictionary, the XML top level tag name is being included after the name of the field along with any special encoding that would be different from the native encoding format.

Specifications for the ANSI/NIST-ITL Type-2 Record require substitution of the abstract element, <itl:DomainDefinedDescriptiveDetail> with a user-defined structure. EBTS provides the substitution element <ebts:DomainDefinedDescriptiveFields> to represent the EBTS Type-2 Record. The ANSI/NIST-ITL 1-2011 standard also provides for inclusion of user-specific data (e.g., for use in intrastate transactions) by creating the abstract type element <itl:OtherDescriptiveDetail>. Consequently, EBTS users may take advantage of the EBTS-provided substitution element <ebts:StateDefinedFields>. Individual data elements within this field must be well-formed XML and contain ASCII data values. These elements are user-definable; their size and content shall be defined by the user and be in accordance with the receiving agency. Currently, these data elements will be ignored when included in the transactions submitted to CJIS/FBI.

The XML encoding requires some deviations from the traditional native format, in both structure and content. Structurally, elements with multiple data items that are natively represented as a single concatenated string are instead placed in separate fields. For example, an entire name would be held in a single string in AKA in the legacy format, while the XML encoding would break this into separate elements for First, Middle, and Last.

Additionally, data items that are related and/or have dependencies on one another may be represented by a nested XML structure, in order to convey this relationship. For example, the concept of a “finger” is represented by using one of the complex elements `<itl:FingerprintImageFingerMissing>` or `<ebts:FingerprintImageFinger>`. Each element contains all the EBTS fields relating to an individual finger.

In regards to content, the XML encoding has a few differences from the native format in the allowed data. Boolean or “flag” values are represented “true” and “false.”

Additionally, NIEM-conformant date fields are used to represent dates. The format is the following:

- A date is shown as CCYY-MM-DD, where:
- CC (Century) must be 19 or 20
- YY (Year) must be 00 to 99
- MM (Month) must be 01 to 12
- DD (Day) must be 01 to the limit defined by the month and year (e.g., DD may be 29 for MM = 02 in leap years).

For example `<nc:Date>1992-12-01</nc:Date>` represents December 1, 1992.

## Type-2 Element Data Dictionary

The T-2 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

**ACN**      **2.071**      **Action to be Taken**      **<ebts:TransactionActionText>**

This field is used to include text answers to submission requests to indicate that a latent case will be established or to indicate recommendations for further actions in either latent or tenprint responses. This field will also be used to indicate action taken by the FBI in response to electronic document (e.g., disposition) submissions. For this field, commas, hyphens, ampersands, slashes, number signs, and blanks are all allowed as special characters.

**AGR**      **2.023**      **Age Range**      **<nc:PersonAgeMeasure>**

This field will be used to give an estimated age range may be entered using a pair of two digit age numbers. For the native encoding of this field, the first two digits shall represent the minimum age, and the second two the maximum age. There shall be no separator character used between the ages. For the XML encoding, there will be two subfields defined for the minimum and maximum range.

**AKA**      **2.019**      **Aliases**      **<ebts:PersonAlternateName>**

This 3-to-50 alpha-numeric special (ANS) field contains alias names of the subject. Up to ten aliases may be provided.

For the native encoding of this field, each alias will be separated from one another by the RS character. AKA may contain a comma, hyphen, or blank as special characters. The format shall be the surname followed by a comma (,) followed by the given name(s) separated by a space. The following restrictions and exceptions to the general format apply (the first three apply only to the native encoding):

1. Minimum length is three bytes in the following sequence: alpha, comma, alpha.
2. A comma must be followed by a minimum of one alpha character.
3. A blank before or after comma is invalid.
4. A hyphen in first and last position of any name segment is invalid.
5. Two consecutive blanks or hyphens between characters are invalid.

**AMP**      **2.084**      **Amputated or Bandaged**      **<itl:FingerprintImageFingerMissing>**

This repeating field contains information about amputated or bandaged fingerprints in an EBTS submission. The field is composed of repeating sets of two subfields:

- Finger Position (FGP)
- Amputated Or Bandaged Code (AMPCD).

This field is to be used any time there are fewer than ten printable fingers in a tenprint submission for finger positions 1 – 10 or positions 11–15 to specify when no slap fingerprint images are provided in the finger positions (ex. Entire right hand is not printed). A partially amputated finger should be printed and be marked amputated, XX. If the finger's image is missing for any reason, (for example, when the arresting agency did not specify a reason in its submission to the State Identification Bureau) the UP code should be used. This field is used to tell AFIS which finger positions need to be characterized. The UP code should only be used when the entire image is not provided for fingerprints in the submission. This code will indicate that AFIS should ignore this image and not include the image in the matching process.

For the native encoding, the two-character finger position code is followed by the US separator and the amputated or bandaged code. Each set of fingers/amp codes shall be separated by the RS separator.

The following example indicates that the third finger is amputated and that the ninth finger print was unavailable or not submitted.

2.084:03USXXRS09USUPGS

## Type-2 Element Data Dictionary

### AMP Codes Table

Finger Position	FGP
Right thumb	1
Right index	2
Right middle	3
Right ring	4
Right little	5
Left thumb	6
Left index	7
Left middle	8
Left ring	9
Left little	10
Plain right thumb	11
Plain left thumb	12
Plain right four fingers	13
Plain left four fingers	14
Plain left and right thumbs	15

Note: When codes 13 – 15 are included, the entire block is missing

Descriptor	AMPCD
Amputation	XX
Unable to print (e.g., bandaged)	UP

**ASL**      **2.047**      **Arrest Segment Literal**      **<ebts:ArrestOffenseData>**

This field is made up of the following subfields:

- Date of Offense (DOO)
- Arrest Offense Literal (AOL).

The AOL is a free text description of an offense charged on an arrest. The first character of the AOL text must not be blank. Each AOL should have a corresponding DOO. The DOO shall appear as an eight-digit number as specified in Section 1.1 of this appendix. The DOO shall not exceed the current date except when the submission originates from an international contributor located in a time zone earlier than the Eastern Time Zone. This date field shall contain the local date for the region submitting the request. CJIS has edit checks in place to allow for the acceptance of the local date as valid up to 24 hours in advance to accommodate the variance between international time zones. Up to 40 occurrences of the ASL are allowed.

For the native encoding format, each occurrence of the ASL shall be separated by the <RS> separator character. The DOO shall be separated from the AOL by the <US> separator character. A DOO is prohibited without a corresponding AOL offense. If a DOO is not present, a <US> character separator shall still be used.

The following native coding example indicates more than one occurrence of the AOL field using DOO:

2.047:19940915<US>DUI<RS>19940920<US>POSSESSION OF FIREARMS<GS>

## Type-2 Element Data Dictionary

**ATN**      [2.006](#)      **“Attention” Indicator**      <nc:CaveatText>

This alphanumeric-special field shall contain a designation of the individual to whose attention a response is to be directed. Periods shall not be used (e.g., Det. J. Q. Public shall be entered as DET J Q PUBLIC). The value of ATN returned to the submitter is the value submitted.

**ATR**      [2.2032](#)      **Audit Trail Record**      <ebts:AuditTrailRecord>

This repeating record contains the information associated with the dissemination of the owner’s images. The following are the subfields included for each requested image:

1. ORI of the originator that received the image,
2. Date the images were disseminated,
3. TOT used to acquire the image set,
4. BSI of the image,
5. IMT of the image,
6. FNR of the image (supports fingerprint and palmprint position codes),
7. PPD of the supplemental image when FNR equals supplemental (19),
8. POS of facial image,
9. SMT code of SMT images.

The FNR and PPD subfields are present in ATR to identify the image within the biometric set that was disseminated when the entire set was not returned.

**BIA**      [2.2031](#)      **Biometric Image Available**      <ebts:BiometricImageAvailableCode>

This field will indicate the existence of available biometric images (fingerprint, palmprint, supplemental print, facial photo, and SMT photo) for an Identity in the NGI AFIS/FBI repository. Allowable BIA values are shown in the table (click title). The following abbreviations are used in the table for each image type: FP – Fingerprint, PP – Palmprint, SP – Supplemental Print, PHF – Photo Facial, and PSMT – Photo Scar, Mark, & Tattoo.

## Type-2 Element Data Dictionary

**BIA Values Table**

Biometric Image(s) Available	Value
None and/or Unsolved	0
FP	1
PP	2
FP, PP	3
SP	4
FP, SP	5
PP, SP	6
FP, PP, SP	7
PHF	8
FP, PHF	9
PP, PHF	10
FP, PP, PHF	11
SP, PHF	12
FP, SP, PHF	13
PP, SP, PHF	14
FP, PP, SP, PHF	15
PSMT	16
FP, PSMT	17
PP, PSMT	18
FP, PP, PSMT	19
SP, PSMT	20
FP, SP, PSMT	21
PP, SP, PSMT	22
FP, PP, SP, PSMT	23
PHF, PSMT	24
FP, PHF, PSMT	25
PP, PHF, PSMT	26
FP, PP, PHF, PSMT	27
SP, PHF, PSMT	28
FP, SP, PHF, PSMT	29
PP, SP, PHF, PSMT	30
FP, PP, SP, PHF, PSMT	31

**BID**      2.2028    Biometric Image Description    <ebts:BiometricImageDescription>

This repeating set contains information about biometric images the user requests in the submission. Each repeating set consists of the following subfields:

1. UCN of the identity or latent record,
2. IMT image type of the image to be retrieved,
3. BSI of the biometric set to be retrieved,
4. FNR is the fingerprint or palmprint position code of the image to be retrieved,
5. PPD of the supplemental image to be retrieved when FNR equals supplemental (19).
6. POS of a face image,
7. SMT code for a scar, mark, tattoo image.

The Image Type subfield (2.2028B IMT) can be used to specify which types of biometric sets are requested, the Biometric Set Identifier (2.2028C BSI) subfield can be used to identify the specific biometric set being requested, and the Print Position Descriptors (2.2028E PPD) subfield can be used to accompany the FNR (2.2028D) subfield to specify which Supplemental Fingerprint and Palm Print images are being requested. The POS (2.2028F) subfield specifies the subject pose code of the facial photo image to be retrieved.

## Type-2 Element Data Dictionary

The SMT (2.2028G) subfield holds the NCIC designation code for a scar mark or tattoo. The SMT subfield is required when an SMT image is to be retrieved. The subfield UCN (2.2028A) must be populated in the BID field. If the BSI (2.2028C) subfield is not present, the representative biometric set(s) are retrieved for the identity specified in the FBI/UCN field. The representative set for fingerprints will be a composite fingerprint set of images, while the representative set of palm prints or supplemental fingerprint and palm print will be the latest set enrolled.

**BID Values Table**

Images Returned	Field Present
Representative set for image type specified	IMT
Specific image set specified in the BSI of that image type specified	IMT, BSI
The friction ridge position image of the representative set for the image type specified	IMT, FNR
The finger position image of the specific image set specified in the BSI	BSI, FNR
The finger position image of the specific image set specified in the BSI of that image type specified	IMT, BSI, FNR

**BIE**      [2.2061](#)      **Biometric Image Enrollment**      <ebts:BiometricImageEnrollmentRecord>

This repeating record contains enrollment information for the biometric types included in the request. There is a record for each enrolled friction ridge biometric set as well as a record for each photo image. The following are the subfields included for each enrollment:

1. BSI of the image,
2. IMT of the image,
3. POS of the subject for facial photo,
4. SMT NCIC code for image.

The POS is optionally populated when the image is a facial photo, and SMT is optionally populated when the image is a scar, mark, or tattoo.

**BIL**      [2.2073](#)      **Biometric Image List**

This repeating set of data elements provides values necessary (i.e., UCN, BSI) to retrieve additional imagery (via IRQ) of a candidate within the CNL of an SRB, as well as providing the biometric capture date for each additional biometric image. BIL is repeated for each image set (BSI) available for each candidate in the CNL. The data elements within BIL are:

1. SI (Subject Identifier) of the candidate
2. BSI (Biometric Set Identifier) of the available image
3. BCD (Biometric Capture Date) of the available image
4. IMT (Image Type) of the available image

**BSI**      [2.2029](#)      **Biometric Set Identifier**      <ebts:BiometricSetID>

This numeric field will uniquely identify each biometric image set or photo, such as a facial photo, a fingerprint set, a palmprint set, or a supplemental print set.



## Type-2 Element Data Dictionary

**CAN**      2.064      **Candidate List**      <ebts:TransactionCandidateList>

This grouped field shall contain a candidate list. It is composed of two subfields:

- Universal Control Number (UCN)
- Name (NAM)

For native encoding, each field will be separated by a <US> separator and will be provided for each candidate in the list. Commas, hyphens, and blanks are allowed in the NAM subfield as specified in the NCIC Message Book, Part 1. Each UCN and NAM set shall be separated from the next by the <RS> separator character. For XML encoding, a new element has been added for coordinating the images with candidates in this list via the ICD in each image record included.

Note: The UCN can contain an FBI number (FNU) if appropriate for that record.

**CCN**      2.094      **Court Case Number**      <j:CourtEventSequenceID>

This is a unique number assigned by the state or federal court system to identify a specific court event occurrence in a subject identity history record. The CCN is an optional element that may assist in matching the submitted disposition data to the correct court cycle. If present in the submission, this field should be returned in the response. Any printable 7-bit ASCII character with the exception of a period (.) is acceptable. Embedded blanks are not permitted. A CCN must not begin with a blank.

**CIDN**      2.2022      **Contributor Assigned Identification Number**      <ebts:ContributorAssignedIdentificationNumber>

This field is the unique number assigned to a single biographic search by the contributor. This field shall contain ten bytes of alphanumeric data. This is a field in a Type-2 biographic search request (EQHR).

**CIN**      2.010      **Contributor Case Identifier Number**      <ebts:ContributorCaseIdentificationNumber>

This grouped free-text field is a 48 byte (maximum) alphanumeric-special assigned by the contributor to uniquely identify a latent case. It consists of:

- a literal subfield Contributor Case Prefix (CIN\_PRE) of up to 24 characters (e.g., “Incident #,” “Laboratory Number,” “Investigation No.”)
- the Contributor Case Identifier subfield (CIN\_ID) of up to 24 characters.

**CIX**      2.011      **Contributor Case Identifier Extension**      <ebts:ContributorCaseExtensionIdentification>

This field is a two byte to four-byte numeric supplement to the Case Identifier Number that allows multiple searches to be associated with the same case. The CIX shall be used only in conjunction with the CIN.

## Type-2 Element Data Dictionary

### CNL 2.2033 Candidate Investigative List <ebts:TransactionCandidateList>

This field is added to the Investigative search response TOTs, providing a candidate list that supports a multi-biometric type and multi-event repository. The legacy CAN field in the SRL is still supported as well for Fingerprint only candidate list. The CNL record set contains ranked list(s) of candidates returned from an investigative search. It is possible for the CNL to contain multiple ranked lists concatenated together due to multiple biometric type repositories being searched, based on request. For friction ridge, NGI supports three biometric type repositories for a latent investigative search: fingerprint, upper-palm, and lower-palm. Therefore, an SRL can contain one, two, or a maximum of three ranked lists where the number of candidates in CNL is determined by NCR. When multiple biometric type repositories are searched, a maximum of NIR images are returned for each repository. Therefore, the max number of images for an SRL is 3 x NIR. The number of candidates returned in a CNL list is based on the NCR from the request. Therefore, the max number of candidates for an SRL is 3 x NCR. Multiple entries in native encoding will be separated by the  $R_s$  separator.

A candidate is defined as a unique event characterized by UCN/BSI/FGP. Based on match score, there may be multiple instances of the same UCN and FGP within a candidate list, but only the highest scoring UCN/BSI/FGP will return with an image, limited by NIR value from request. Other, lower scoring BSIs for a given UCN-FGP combination that appear within the NCR length list will not include images and may not be grouped by UCN (CNL is ordered by match score per ranked list). The number of candidates returned may be less than the maximum specified as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches. Also, depending on the number of unique UCN and FGP candidates (up to NCR), it is possible that the NIR in request will not be met; i.e. less than NIR images may be returned per candidate list biometric type. The CNL field supports a repeating set of the following subfields:

1. UCN of the candidate (FRIF or ULF member),
2. NAM indicates the name of the subject,
3. BSI of the candidate image,
4. IMT of the candidate image,
5. FGP of finger or palm,
6. PPD of the supplemental image when FGP equals supplemental (19),
7. MSC indicates the match score of the candidate,
8. BIA indicates the available biometric image types for the candidate,
9. NDR is a future capability where it will be populated with searched NDR value(s) the candidate resides in,
10. IDC is the Image Designation Character,
11. NOT provides owning ORI information when no image is available for candidate,
12. POS provides Pose codes for facial images,
13. SMT provides SMT codes for SMT images.

## Type-2 Element Data Dictionary

**CRI**      [2.073](#)      **Controlling Agency Identifier**      <ebts:RecordControllingAgency>

In Criminal and Civil transactions, the first instance of this field shall contain the originating agency identifier (ORI) of the organization controlling the transaction when that organization is different than the one submitting the transaction (e.g., the CJIS Systems Agency, or CSA). When the controlling agency has the same ORI as the CSA, both the ORI and CRI fields shall be submitted with the same identifier. In criminal transactions, the CRI will usually refer to the booking station that has submitted the subject's fingerprint card or photo to be transmitted through the CSA to the FBI. For Civil submissions, this field may be user-defined in accordance with predefined parameters and must be validated through the field specification edits and the format of an NCIC-authorized ORI. The FBI uses the first instance of CRI in any transaction that would modify criminal records as the authority to do so. When a Civil transaction is an identification to a criminal subject and the first instance of the submitted CRI is not an authorized ORI, the ORI of the State Identification Bureau that submitted the transaction will be used in its stead. The second and third instances of CRI, when sent, are treated as user-defined fields. (See also Appendix B for definitions of ORI and DAI.) The CRI returned is otherwise the same as was submitted unless the submitting agency has used a deleted or retired CRI, in which case its replacement will be used. For EBTS purposes, this field shall be a nine-byte alphanumeric field. The first two characters shall be a valid alpha-character POB code, which represents the state or country in which the agency is located, and the entire CRI shall validate to an NCIC-authorized ORI. For federal agencies, the first two characters should coincide with its respective headquarters or office ORI. If an agency is submitting for an entity outside of its respective state, the channeling agency need only ensure that submitted CRIs represent valid ORIs that have been added to the CJIS Computerized Contributor Address file. Must be an ORI.

For the UHN TOT, the CRI contains the ORI of the search transaction for which a hit generates the unsolicited notification.

**CRN**      [2.085](#)      **Civil Record Number**      <ebts:CivilRecordIdentification>  
A unique identifier assigned to each Civil Subject Record.

**CSF**      [2.2006](#)      **Cascaded Search Flag**      <ebts:RecordCascadedSearchCode>  
This two-digit alpha field is used to flag a Special Population Cognizant (SPC) File record of interest that is to be subjected to cascaded searches from the Criminal File (CR), the Civil File (CI), or Both (BO). In the event a cascaded search record hits a flagged record, a separate response will be sent to the owner (ORI) of the SPC File for candidate image comparison.

## Type-2 Element Data Dictionary

**CSL**      **2.051**      Court Segment Literal      <ebts: CourtDispositionData>

The CSL field is made up of the following subfields:

- The Court Disposition Date (CDD) is the date a court count was disposed of by the court. The CDD shall appear as an eight-digit number as specified in Section 1.1 of this appendix. The CDD shall not exceed the current date except when the submission originates from an international contributor located in a time zone earlier than the Eastern Time Zone. This date field shall contain the local date for the region submitting the request. Edit checks will accept the local date as valid up to 24 hours forward to accommodate the variance between international time zones.
- The Court Offense Literal (COL) contains free text description of an offense charged in a court count. The first character of the COL must not be a blank.
- The Other Court Sentence Provision Literal (CPL) contains free-text information on sentence provisions.
- The Court Disposition (CDN) is a disposition value associated with the definitive disposition information about a Subject for a particular charge.

Up to 40 occurrences of the CSL are allowed. Each occurrence in the native encoding of the CSL shall be separated by the <RS> separator character. A CDD (if available), followed by a COL, followed by a CPL, followed by a CDN, each separated by a <US> separator character must be present for each occurrence of the CSL field. If the CDD is not available, a <US> separator character alone shall be used immediately after the field tag or preceding <RS> separator character. COL, CPL and CDN are mandatory, while the CDD is optional.

When submitting a custody tenprint, use this field for custody information. In the event that there is no arrest information available when submitting a custody tenprint, the COL and CDD must be copied to the corresponding AOL and DOO fields of the Arrest Segment Literal (ASL), which is mandatory in all criminal tenprint submissions.

The following is a native encoding example of the CSL with multiple occurrences:

```
2.051:19940930<US>DUI<US>5 DAYS JAIL, PAY COURT  
COSTS<US>CONVICTED<RS>19940930<US>POSSESSION OF FIREARMS<US>10 DAYS JAIL, PAY COURT  
COSTS, $50<US>CONVICTED<GS>
```

The following is a native encoding example of the CSL when the first of two CDDs are not available:

```
2.051:<US>DUI<US>5 DAYS JAIL, PAY COURT COSTS<US>CONVICTED<RS>19940930<US>POSSESSION
```

## Type-2 Element Data Dictionary

**CDN Values Table**

Court Disposition	Description
CONVICTED	Judicial finding of guilty of a crime in adult court, by verdict or plea
ACQUITTED	Finding, by jury or judge, that a person is not guilty of the charged offense
DISMISSED	Decision by the court that terminates prosecution; limited to court actions only, including Vacated, and Stricken on Leave, and Set Aside
CHARGES	Use for arrest disposition only
NOT PROSECUTE	Use for events that end at the arrest, grand jury or prosecution phase – Nolle Prosequi, No Bill, Not Filed, No Action Taken
MENTAL HEALTH ADJUDICATION	Court action to suspend prosecution while determining competence to stand trial or a finding of not guilty by lack of mental responsibility. Meets qualifying criteria for mental defective. Includes Acquittal or Dismissal by Reason of Insanity.
DIVERSION	Referral to a program intended to enable alleged offenders to avoid criminal charges and a criminal record. Diversion programs may be run by law enforcement agencies, courts, prosecutors, or outside agencies. An offender may be referred to a diversion program before charges are brought, before trial commences, or before sentence is imposed. Includes Pre-Trial, Adult, Juvenile diversion and Probation before Judgment.
CONDITIONAL	Court outcome involving the absence of determination of guilt. If the type is based on conditions set by the court, the outcome may change if the conditions are satisfied. Includes Adjudication Withheld, Conditional Discharge, Non-Adjudication of Guilt, and Retirement.
JUVENILE ADJUDICATION	Court adjudication of delinquency or imposition of juvenile sanctions in adult court; not limited to felonies. This would be a conviction if the subject was treated as an adult. Includes Juvenile Delinquency and Youthful Offender.
REVOCATIO	An annulment, cancellation or reversal of a finding of guilty
EXTRADITED	The official surrender of an alleged criminal by one jurisdiction to another; the return of a fugitive from justice, regardless of consent, by the authorities where the fugitive resides. Use for arrest dispositions only.
TRANSFERR ED	The removal of a case from the jurisdiction of one court or judge to another. Includes Remanded (case sent back to court for further action)
DEPORTED	The expulsion or transfer of an alien from the country. Use for arrest dispositions only.
DECEASED	Subject charged is deceased.
CONSOLIDA TED	Court ordered unification of two or more charges or cases into a single matter.
BAIL/BOND FORFEITURE	Money or property lost or confiscated by this process; a penalty. This may be a disposition in older, legacy records.
DEFERRED	Postponed or delayed, could relate to prosecution, sentence, judgment or disposition.
UNAVAILAB LE	This will be entered by the state repository if the final disposition is unavailable. This code may be used when, upon thorough research, the disposition could not be found or was purged in accordance to record retention schedules.
DESTROYED	This will be entered by the state repository if the disposition could not be found due to destruction through a fire or a natural disaster.

**CST**      **2.061**      **Case Title**      <nc:CaseTitleText>

This field identifies the Latent Case. It will include information concerning the case, and it must include the offense type.

## Type-2 Element Data Dictionary

**CTZ**      [2.021](#)      [Country of Citizenship](#)      *<ebts:PersonCitizenshipCode>*

This field contains two-letter abbreviation for the name of the country of which the subject is a citizen. Entry must be a valid country code from the NCIC State and Country Data Code Table found in Appendix O.

**DATUM\_ID**      [2.2027](#)      [Geographic Coordinate Datum](#)      *<ebts:GeographicCoordinateDatumCode>*

This field contains an identifier for the datum used to express the coordinates provided in GEO\_CORD. If this field is absent with the GEO\_CORD present, then the default datum is WGS-84 / NAD-83.

**DATUM ID Code Values Table**

Datum ID	Description
AIRY	Airy
AUST	Australian
BES	Bessel 1841
BESN	Bessel 1841 (Nambia)
CLK66	Clarke 1866
CLK80	Clarke 1880
EVER	Everest
FIS60	Fischer 1960 (Mercury)
FIS68	Fischer 1968
GRS67	GRS 1967
GRS80	GRS 1980
HELM	Helmert 1906
HOUG	Hough
INT	International
KRAS	Krassovsky
AIRYM	Modified Airy
EVERM	Modified Everest
FIS60M	Modified Fischer 1960
SA69	South American 1969
WGS60	WGS-60
WGS66	WGS-66
WGS72	WGS-72
WGS84	WGS-84/NAD-83

**DNAC**      [2.2018](#)      [DNA in CODIS Flag](#)      *<ebts:BinaryCODISAvailableIndicator>*

This is a one-byte field that will indicate whether the DNA available is located in the CODIS database for the subject identified on the CAR, CNA, and CPNU TOTs. The permissible values are 'Y' or 'N'. For XML encoding, this field is represented as a Boolean value.

**DNAF**      [2.2016](#)      [DNA Flag](#)      *<ebts:PersonDNAAvailableIndicator>*

This is a one-byte field that will indicate whether DNA is available for the subject identified on the CAR, CNA, and CPNU TOTs. The permissible values are 'Y' or 'N'. For XML encoding, this field is represented as a Boolean value.

## Type-2 Element Data Dictionary

**DOA**      [2.045](#)      **Date of Arrest**      <ebs:ArrestDate>

This field contains the date of arrest. The date shall appear as an eight digit number in the same format as specified in Section 1.1 of this appendix. DOA shall not exceed date of submission except when the submission originates from an international contributor located in a time zone earlier than the Eastern Time Zone. This date field shall contain the local date for the region submitting the request. Edit checks will accept the local date as valid up to 24 hours forward to accommodate the variance between international time zones.

**DOB**      [2.022](#)      **Date of Birth**      <nc:PersonBirthDate>

This field contains the date of birth. It is entered as an eight digit number in the same format as specified in Section 1.1 of this appendix. If DOB is completely unknown, for the native encoding enter as 00000000, and for the XML encoding, use the representation of a null parent element (<nc:PersonBirthDate/>). Partial DOBs are not allowed. DOB shall not exceed date of submission after time zone adjustment. When a submission contains an unknown DOB and is a non-identified retained, that submission will be rejected, as IAFIS will not allow a master record to be created with an unknown DOB.

**DORI**      [2.2017](#)      **DNA Location**      <nc:BiometricRepositoryOrganization>

This is an alpha-numeric field that will contain the ORI of the contributor which has the DNA available for the subject identified on the CAR, CNA, and CPNU TOTs. The field will be required when the DNAF = 'Y'.

**DPR**      [2.038](#)      **Date Printed**      <nc:BiometricCaptureDate>

This field contains the date that the subject was fingerprinted. The format shall be the same as that specified in Section 1.1 of this appendix. DPR shall not exceed date of submission except when the submission originates from an international contributor located in a time zone earlier than the Eastern Time Zone. This date field shall contain the local date for the region submitting the request. Edit checks will accept the local date as valid up to 24 hours forward to accommodate the variance between international time zones.

**DSPSET**      [2.2053](#)      **Disposition Set**

This repeating field contains the following subfields:

- o CDD – Court Disposition Date
- o COL – Court Offense Literal
- o CPL – Court Provision Literal
- CDN - Court Disposition

**DTR**      [2.2068](#)      **Rap Back Expiration Date Range**

Used in the Rap Back Subscription List Request (RBRPT) transaction as an input parameter to limit responses to subscriptions within the identified range.

**EAD**      [2.039](#)      **Employer and Address**      <nc:Employer> and <nc:EmploymentLocation>

The name and address of the subject's primary employer may be entered into this free-text field. The EAD returned in a response is the same as the one submitted. For the native encoding, this field is a free form text field. For the XML encoding, it consists of different fields; one for the Employer and one for the Employer's address.

**EID**      [2.049](#)      **Employee Identification Number**      <ansi-nist:TransactionUserIdentification>

This field contains the employee identification number (e.g., user ID) for federal agency employees granted privileges relating to Special Population Cognizant (SPC) File searching or maintenance. Maintenance privileges include adding records, updating records, deleting records, or appending additional sets of fingerprint images to an existing SPC record.

## Type-2 Element Data Dictionary

**ERS**      [2.075](#)      **Electronic Rap Sheet**      <ebts:TransactionElectronicRapSheetText>

This field shall contain the electronic identity history. The electronic identity history is an electronic copy of the Identification Record Report (IDRR) or the Non-Identification Response (NIDR) as are done today. The electronic identity history shall consist of lines with a maximum of 74 characters per line (text of 72 plus two line control characters). The RPISR transaction will populate this field with the NGI Identity History Summary (IHS). Other transactions will migrate to using the IHS in the future. The IHS shall also consist of lines with a maximum of 74 characters per line (text of 72 plus two line control characters). For a TPRR transaction that contains multiple candidates, the identity history for each candidate will be concatenated into this field.

**ESI**      [2.2037](#)      **External Subject Identifier**      <ebts:ExternalSubjectIdentifier>

A subject identifier from an external system that represents a distinct identity.

**EVI**      [2.2035](#)      **Event Identifier**      <ebts:EnrollmentEventID>

This numeric field will be used to identify a specific enrollment event during FIS processing. An EVI may have multiple BSI sets associated with a specific event.

**EXP**      [2.080](#)      **Response Explanation**      <ansi-nist:TransactionReasonText>

This field is free-form text to elaborate on the Response Code field.

**EYE**      [2.031](#)      **Color Eyes**      <nc:PersonEyeColorCode>

For this field, the three letter code from the following table is used to indicate the subject's color of eyes.

**EYE Code Table**

Eye Color	Code
Black	BLK
Blue	BLU
Brown	BRO
Gray	GRY
Green	GRN
Hazel	HAZ
Maroon	MAR
Multicolored	MUL
Pink	PNK
Unknown	XXX

**FBI**      [2.014](#)      **FBI Number (UCN)**      <j:PersonFBIIdentification>

This field contains the subject's FBI number if known. A valid FBI number shall be no more than nine alphanumeric characters. The FBI number returned in a response is dependent upon the search results. As NGI updates and adds functionality, this field will be used to identify the specific Identity contained in the NGI database. This Universal Control Number (UCN) will be used to identify records in the criminal, civil, and other new repositories along with the Unsolved Latent File (ULF). The Legacy Unsolved Latent Number (SCNA) used in IAFIS for ULF records and will be provided in this field where designated in the message definition.

**FFN**      [2.003](#)      **FBI File Number**      <ebts:FBIFileNumber>

This is a 10 byte numeric representing the FBI Investigative File Number. This is not the FBI Number specified by the mnemonic "FBI." Since it is used for FBI Latent Print Unit record-keeping purposes, it is imperative that the user transmit this number if it is known.



## Type-2 Element Data Dictionary

**FGP**      **2.074**      **Finger Position**      **<ansi-nist:FrictionRidgePositionCode> OR <ansi-nist:FingerPositionCode>**

This field is used for latent searches and contains the fingerprint/supplemental/palmprint position(s) code of the latent print(s) submitted for searching. (See Appendix P, Table P-2 for code values for FGP)

If more than one finger is submitted with native encoding, then the codes will be separated by the <RS> character separator. For latent searches, if multiple fingerprint images are included in one search, finger position is mandatory for all images. If finger position is unknown, the search may contain only a single image, and the field FGP will be omitted or may contain multiple guesses at the correct finger position in the FGP field. In this case, the PAT field must contain "00" in its Finger Number subfield to indicate that the actual position is unknown (see also PAT entry, including example of XML usage for multiple finger guesses).

**FIU**      **2.072**      **Fingerprint Image(s) Updated**      **<ebts:TransactionFingerprintImagesUpdated>**

This alphanumeric field contains the finger positions that were updated in the FBI's Fingerprint Image Master File as a result of an electronic request to update fingerprint images. The finger numbers for which image information is requested are selected from Table, "Finger Position Code," in the ANSI NIST ITL. Up to 13 individual finger numbers may be listed. For native encoding, each finger number will be separated from one another by the <US> separator. If images of all 14 fingers were updated, the single character "A" is shown instead of individual finger numbers. If no images were updated, an "N" will be returned. For XML encoding, '0' will be used to specify all fingers were updated while '255' will be used for no images updated.

**FNR**      **2.057**      **Finger Number(s) Requested**      **<ebts:TransactionFingerprintImagesRequested>**

This numeric field is used in transactions involving a request for fingerprint image information. The finger numbers for which image information is requested are selected from Table, "Finger Position Code," in the ANSI/NIST ITL. Up to 13 individual finger image numbers may be listed. For native encoding, finger numbers shall be separated from one another by the <RS> separator. If all 14 tenprint images are desired, 00 is shown instead of individual finger numbers. For transactions that allow only the ten rolled fingerprint images, when all ten images are desired, list each one separately. For native encoding, the finger codes being requested shall appear as 01<RS> 02<RS> ... <RS>10<GS>. This field may include the supplemental position code of 19, along with the palm position codes outlined in Table P-2.

**FPC**      **2.033**      **NCIC Fingerprint Classification**      **<ebts:NCICFingerprintClassificationCode>**

If available, the NCIC fingerprint classification will be returned in the FBI's responses to latent submissions. The native encoding of NCIC FPC is composed of 20 characters. In the positions representing each finger (see FPC Table for values) patterns may be placed (see FPC Table for values).

The NCIC FPC for a set of fingerprints made up of all ulnar loops in native encoding might read:

2.033:12101116141109111713GS

A combination of loops and whorls with an amputated right index finger in native encoding might read:

2.033:12XX11CO14115906C113GS

For XML encoding, only the two-character NCIC FPC Code value is necessary.

Refer to the NCIC Code Manual, 4-28, for the FPC Field for Unidentified Persons.

## Type-2 Element Data Dictionary

**FPC Values Table**

Positions	Finger
1 and 2	Right thumb
3 and 4	Right index
5 and 6	Right middle
7 and 8	Right ring
9 and 10	Right little
11 and 12	Left thumb
13 and 14	Left index
15 and 16	Left middle
17 and 18	Left ring
19 and 20	Left little

Pattern Type	Pattern Subgroup	NCIC FPC Code
Arch	Plain Arch	AA
	Tented Arch	TT
Loop	Radial Loop	Two numeric characters. Determine actual ridge count and add fifty (50). For example, if the ridge count of a radial loop is 16, add 50 to 16 for a sum of 66. Enter this sum (66) in the appropriate finger position of the FPC field.
	Ulnar Loop	Two numeric characters indicating actual ridge count (less than 50). For example, a ridge count of 14, enter as 14; a ridge count of 9, enter as 09.
Whorl*	Plain Whorl	
	Inner	PI
	Meeting	PM
	Outer	PO
	Central Pocket Loop Whorl	
	Inner	CI
	Meeting	CM
	Outer	CO
	Double Loop Whorl	
	Inner	
	Meeting	DI
	Outer	DM
		DO
	Accidental Whorl	
	Inner	XI
	Meeting	XM
	Outer	XO
	Missing/Amputated Finger**	XX
	Scarred/Mutilated Pattern***	SR
	Approximate Fingerprint Class****	AC
	Unclassifiable****	UC

## Type-2 Element Data Dictionary

\* Prior to adoption of the above method for coding whorl patterns, this pattern was divided into inner, meeting, and outer subgroups only with codes II, MM, and OO, respectively. Some older records in the file may show the codes II, MM, and OO.

\*\* Code XX is used in instances of missing and totally/partly amputated fingers where conditions make it impossible to accurately classify an impression according to the above instructions for NCIC FPC. It is recognized that under the Henry System, if a finger is missing or amputated, it is given a classification identical to the opposite finger; however, this must not be done in the NCIC FPC because the location of finger or fingers missing/amputated is not indicated.

\*\*\* Code SR is used in instances in which the fingerprint cannot be accurately classified because of complete scarring or mutilation and a classifiable print cannot be obtained. As in the case of missing and amputated fingers, the procedure for assigning the classification of the opposite finger, as is done under the Henry System, should not be used for the NCIC FPC.

\*\*\*\* Codes UC and AC still exist for some legacy records in the Identity History file.

### **GEO**      **2.044**      **Geographic Area of Search**      <ebts:TransactionSearchAreaCode>

This field indicates the geographic area to be searched. The appropriate two letter state/territory abbreviation shall be used as listed in Part IV of the NCIC State and Country Data Code Table. Each GEO entry shall be separated from the next by the <RS> separator character. Up to five state/territory selections can be made within the GEO field. If inclusion of all states and territories is desired, this field shall be omitted. When designating a specific state/territory within the GEO field, the IAFIS database search scope is limited to images previously submitted by the specified state or territory (i.e., individuals previously arrested in the designated location(s)). The GEO selection allows users to further narrow file penetration and may result in candidates being returned which would ordinarily be dropped due to low scores. Users are always encouraged to perform a second search with GEO omitted, if a GEO filtered search is not successful.

### **GEO\_CORD**      **2.2026**      **Geographic Coordinate Locator**      <ebts:RecordBiometricCaptureGeoLocation>

This field will be used to associate the location where the biometric record was captured. This field contains the longitude and latitude at which the submission was collected. It consists of Latitude Degree, Latitude Minute, Latitude Second, Longitude Degree, Longitude Minute, and Longitude Second. Both Latitude Degree and Longitude Degree are mandatory if this field is present. Decimal values are allowed in each information item. If a decimal value is used in a particular information item, the more granular information item shall be empty (e.g., if Longitude Minutes equals 45.67, Longitude Seconds shall be empty). The data in the Latitude Degree subfield is in degrees in the range of +90 to -90. The data in the Longitude Degree subfield is in the range of +180 to -180. The hyphen representing a negative value is required; the plus sign for positive values may be omitted. The data in the Latitude Minute, Latitude Second, Longitude Minute, and Longitude Second subfields are in the range of 0 – 60. Geographic Coordinate Latitude Degree and Coordinate Longitude Degree subfields are mandatory. For the native encoding, if any other subfield is not available, a <US> separator character alone shall be used immediately after the preceding <US> separator character.

**GEO CORD Value Table**

Identifier	Subfield Name	Type	Min Size	Max Size	Special Characters
LATD	Latitude Degree	NS	1	9	Period, Plus, Hyphen
LATM	Latitude Minute	NS	1	8	Period
LATS	Latitude Second	NS	1	8	Period
LOND	Longitude Degree	NS	1	10	Period, Plus, Hyphen
LONM	Longitude Minute	NS	1	8	Period
LONS	Longitude Second	NS	1	8	Period

## Type-2 Element Data Dictionary

**GEO\_TIME**     2.2025     **Geographic Coordinate  
Date Time Stamp**     <ansi-nist:TransactionUTCDate>

The Geographic Coordinate Date Time Stamp field provides a mechanism for expressing the date and time in terms of universal Greenwich Mean Time (GMT) units for time of biometric capture. This field will be associated with the Geographic Coordinate Latitude/Longitude (GEO\_CORD) and Geographic Coordinate Datum (DATUM\_ID). Use of the GMT field eliminates local time inconsistencies encountered when a transaction and its response are transmitted between two places separated by several time zones. The GMT provides a universal date and 24-hour clock time independent of time zones. In the native encoding, it is represented as “CCYYMMDDHHMMSSZ,” a 15-character string that concludes with a “Z.” For the XML encoding, it is represented as “CCYY-MM-DDTHH:MM:SSZ,” a 20-character string with a literal “T” separating the date from the time. The “CCYY” characters shall represent the year of the transaction, the “MM” characters shall be the tens and units values of the month, and the “DD” characters shall be the day of the month; the “HH” characters represent the hour, the “MM” the minute, and the “SS” represents the seconds. The complete date shall not exceed the current date.

**HAI**     2.032     Hair Color     <ebts:PersonHairColorCode>

In this field, the three letter code is used to indicate the subject’s color of hair.

**Hair Color Code Table**

Hair Color	Code
Bald	BAL
Black	BLK
Blond or Strawberry	BLN
Blue	BLU
Brown	BRO
Gray or Partially Gray	GRY
Green	GRN
Orange	ONG
Pink	PNK
Purple	PLE
Red or Auburn	RED
Sandy	SDY
Unknown	XXX
White	WHI

**HGT**     2.027     **Height**     <nc:PersonHeightMeasure> <nc:MeasurePointValue>  
and <nc:MeasureUnitText>

This field contains the subject’s height as a three character value. If reported in feet and inches, the first (leftmost) digit is used to show feet while the two rightmost digits are used to show the inches between 00 and 11. In the XML encoding, measurement units of ‘FeetInches’ or ‘Inches’ are entered in the nc:MeasureUnitText field. In the native encoding, if reported in inches, then the leftmost character is “N” followed by two digits. If height is unknown, 000 is entered. The allowable range is 400 to 711 or N48 to N95. Heights outside this range will be clamped at these limits.

## Type-2 Element Data Dictionary

**HTI**      2.2024      Hit Type Indicator      <ebs:TransactionHitCategoryCode>

This field will contain a code for the type of hit that generated an unsolicited notification. In the future, a fixed list of values will be created to populate this field. This field will initially be used for the UHN TOT for RISC Notifications. The value will be "RISC" for this initial use. This field will contain a code for the type of hit that generated an unsolicited notification. This field will be used for UHN Notifications.

**Hit Type Indicator Table**

Code	Hit Type
RISC	Identification Search Hit RISC Record
SPC	Identification Search Hit SPC Record
SUPV REL	Result of activity on a Supervised Release Subject
FSI	Identification Search Hit FSI Record

**HTR**      2.028      **Height Range**      <nc:PersonHeightMeasure> <nc:MeasureRangeValue> and <nc:MeasureUnitText>

This field will be used to give an estimated height range to be expressed as two three-character values formatted as described for mnemonic HGT, indicating the shortest and tallest heights of the subject. For the native encoding of this field, the first three characters shall represent the minimum height and the second three the maximum height. There shall be no separator character used between the heights. The allowable range is 400 to 711 or N48 to N95. Heights outside this range will be clamped at these limits.

**ICO**      2.056      **Identification Comments**      <j:SubjectOffenderNoticeText>

Additional miscellaneous identification remarks providing the reason for caution may be entered in this free-text field. The first character may not be a blank.

**IDC**      2.002      **Image Designation Character**      <ansi-nist:ImageReferenceIdentification>

This **mandatory** field shall be used to identify the user-defined text information contained in this record. The IDC contained in this field shall be the IDC of the Type-2 logical record as found in the file content field of the Type-1 record.

**IFS**      2.2021      Identification Firearms Sales      <j:PersonFirearmSalesDisqualifiedCode>

This field will be a required element for the DSPE TOT indicating a prohibitor that may prevent the subject from the purchase of a firearm.

**Identification Firearms Sales Code Values Table**

Code	Description
D	Disqualification for Firearms Sales
X	Court Disposition Pending/Conviction Status Unknown
C	No Disqualification for Firearms Sales

## Type-2 Element Data Dictionary

**IIR**      [2.2012](#)    [Iris Images Requested](#)      <ebts:RecordIrisImagesRequestedCode>

This optional field shall be used to request iris images in an Image Request (IRQ) transaction. The values of this one-byte numeric field will be either 0 (both eyes), 1 (left eye), or 2 (right eye). If not present in the transaction, no iris images will be returned.

**IIR Values**

Image Type	Value
Both Eyes	0
Left Eye	1
Right Eye	2

**IMA**      [2.067](#)    [Image Capture Equipment](#)      <ebts:RecordImageCaptureDetail>

This free-text field is used to log the make, model, and serial number of the equipment used to acquire images. It is composed of three subfields:

- Make (MAK)
- Model (MODL)
- Serial Number (SERNO) of the acquisition device

For native encoding, these subfields shall be separated by the <US> separator character.

**IMT**      [2.062](#)    [Image Type](#)      <ebts: RecordBiometricImageCategoryCode>

This field identifies the type of image (e.g., palm prints, toe prints) included in an electronic submission and response. The field definition has been modified to allow multiple occurrences in one transaction. The following table is a list of IMT values to be used to identify the record(s) present or biometric set(s) being referenced in the submission or response. Note that the value of 2 is deprecated in favor of the new value of 6, and the values 4 and 5 are deprecated in favor of the new value of 7. For XML codes see EBTS Information Exchange Package Documentation.

**Image Type Code Table**

Image Type	Value
Fingerprint (Event)	1
Palmprint	3
Supplemental Print	6
Latent Friction Ridge	7
Composite Fingerprint	8
Photo Facial	9
Photo Scar, Mark, & Tattoo	10
Iris (Future)	11
Fingerprints on Front of Palm Card (Future)	12
Fingerprints on Back of Palm Card (Future)	13
Unknown Facial Photo (UFP)	14

**LCN**      [2.012](#)    [FBI Latent Case Number](#)      <ebts:FBILatentCaseNumber>

This field is an 11 byte alphanumeric/special assigned by the FBI LPS. As this field is for FBI LPS internal use only, this response field will be used for record-keeping purposes only.

**LCX**      [2.013](#)    [Latent Case Number Extension](#)      <ebts:FBILatentCaseNumberExtension>

Defines extensions assigned by the FBI for each submission related to a Latent Case Number. The LCX shall be a five-digit extension starting with "00000" for the first submission and incrementing by one for each subsequent submission. The LCX shall be used only in conjunction with LCN. As this field is for FBI LPS internal use only, this response field will be used for record-keeping purposes only.

## Type-2 Element Data Dictionary

**LEN**      2.001      **Logical Record Length**

This field contains the length of the logical record specifying the total number of bytes, including every character of every field contained in the record. The number of characters added to the record by the LEN field itself shall be included in calculating the value of LEN.

**MAI**      2.2052      **Maintenance Action Indicator**

A code to indicate what maintenance operation is being requested in a maintenance type of transaction.

**MAI Values Table**

MAI Code Values	Maintenance Operation
REPLACE	Replace existing data with supplied information
DELETE	Delete existing data for referenced record
ADD	Add supplied information to existing data

**MIL**      2.042      **Military Code**      <ansi-nist:TransactionSubmissionMilitaryCode>

A one letter code from the Military Code Table shall be entered in this field to indicate which branch of the United States Military submitted the enlistment transaction.

**Military Code Table**

Military Branch	Code
Army	A
Air Force	F
Navy	N
Marines	M
Coast Guard	G

**MNU**      2.017      **Miscellaneous Identification Number**      <nc:PersonOtherIdentification>

The subject's miscellaneous identification numbers shall be entered in this field.

For native encoding, the format of the data shall be a two letter identifying code, followed by a hyphen ( - ), followed by the number itself. The size of the MNU is limited to 15 characters and as many as four miscellaneous numbers may be included in this field. Each MNU shall be separated from the next by the <RS> separator character.

For XML encoding, the data is formatted into two separate fields; one for the code from the table below and another for the number itself.

The MNU Code table lists the acceptable two letter identifying codes. If "AF" or "AS" is entered, all characters following the hyphen must be numeric. Interspersed blanks are invalid. Types of numbers not listed in the table (such as driver's license) shall not be entered. Only U.S. passport numbers shall be entered; foreign numbers shall be ignored.

## Type-2 Element Data Dictionary

### Miscellaneous Code Table

Identifying Agency	Code
Air Force Serial Number	AF
Non-Immigrant Admission Number	AN
Alien Registration Number	AR
Air National Guard Serial Number, Army Serial Number, National Guard Serial Number	AS
Bureau Fugitive Index Number	BF
Canadian Social Insurance Number	CI
U. S. Coast Guard Serial Number	CG
Fingerprint Identification Number (DHS only)	FN
Identification Order Number	IO
Marine Corps Serial Number	MC
Mariner's Document or Identification Number	MD
RCMP Identification or Fingerprint Section Number	MP
National Agency Case Number	NA
Navy Serial Number	NS
Originating Agency Police or Identification Number	OA
Personal Identification Number (State Issued Only)	PI
Passport Number (U.S. Only)	PP
Port Security Card Number	PS
Selective Service Number	SS
Veterans Administration Claim Number	VA

**MSC**      **2.089**      **Match Score**      <ebts:CandidateMatchScoreValue>

This field contains the match score from AFIS for each candidate listed in the 2.064 CAN field.

**MSG**      **2.060**      **Status/Error Message**      <ebts:TransactionStatusText>

This free-text field will contain reason, status, or error messages that are generated as a result of the processing of a transaction and will be sent back to the submitter. For example, an Unsolicited Unsolved Latent Delete transaction will contain the reason for the deletion of a record. For native encoding, each message will be separated by the RS separator character.

**NAM**      **2.018**      **Name**      <ebts:PersonName>

This alpha-special field contains the name(s) of the subject. The native encoding format shall be the surname followed by a comma (,) followed by the given name(s), which are separated by a space. Part IV of the NCIC Code Manual describes in greater detail the manner in which each name is to be entered. Hyphens, commas, and blanks are allowed as special characters. Numerals are not allowed. The XML encoding will consist of three subfields; given name, middle name, and surname. Special values of NAM to be entered in cases where the subject's name is not known are:

**Name Table**

Condition Name	Field Name
Amnesia Victim	"UNKNOWN AMNESIA,XX"
Unknown Deceased	"UNKNOWN DECEASED,XX"
Name Not Available (Other)	"DOE,JOHN" or "DOE,JANE"



## Type-2 Element Data Dictionary

**NAM1**      [2.2001](#)      **Name-One**      <nc:PersonSurName>

This alpha-special character field is the first of five name fields specifically to facilitate the communication of long names in excess of the number of characters provided for by other name field definitions. These long name fields provide the ability to identify subjects cross-culturally by simply passing as many names as are required to identify a subject in the order that subject's name appears. NAM1 represents the surname, family name, or last name depending on the culture. The maximum length of the NAM1 field is 50 characters.

**NAM2**      [2.2002](#)      **Name-Two**      <nc: PersonGivenName>

This alpha-special character field is the second of five name fields (see NAM1) specifically to facilitate the communication of long names in excess of the number of characters provided for by other name field definitions. This field will represent the given name (e.g., Brian) or an only name used in a single name culture (e.g., David). The maximum length of the NAM2 field is 50 characters.

**NAM3**      [2.2003](#)      **Name-Three**      <nc: PersonMiddleName>

This alpha-special character field is the third of five name fields (see NAM1) specifically to facilitate the communication of long names in excess of the number of characters provided for by other name field definitions. This field could be the middle name for a culture using three names (e.g., David), possibly to indicate tribal, village, or parentage information. The maximum length of the NAM3 field is 50 characters.

**NAM4**      [2.2004](#)      **Name-Four**      <ebts:PersonFourthImportanceName>

This alpha-special character field is the fourth of five name fields (see NAM1) specifically to facilitate the communication of long names in excess of the number of characters provided for by other name field definitions. This field is the fourth name for a culture using four or five names (e.g., a tribal or village name, such as "al Tikriti," or from Tikrit, or to indicate parentage, such as "ben Reuben," or son of Reuben, reflecting the father). The maximum length of the NAM4 field is 50 characters.

**NAM5**      [2.2005](#)      **Name-Five**      <ebts:PersonFifthImportanceName>

This alpha-special character field is the fifth of five name fields (see NAM1) specifically to facilitate the communication of long names in excess of the number of characters provided for by other name field definitions. This field could be the fifth name for a culture using five names (e.g., a tribal or village name, such as "al Tikriti," as in from Tikrit, or to indicate parentage, such as "ben Reuben," as in son of Reuben, reflecting the grandfather). The maximum length of the NAM5 field is 50 characters.

**NCR**      [2.079](#)      **Number of Candidates Returned**      <ebts:TransactionImagesRequestedQuantity>

This optional field contains the number of candidates the submitter desires to receive in response to a biometric Investigative search request per ranked candidate list with a maximum of 99. If multiple candidate lists are to be returned in a search request the NCR value applies to each. If NCR is omitted in a biometric investigative search request, it defaults to the max value of NIR. If the NIR in the request is greater than NCR in the request, CJIS will set NIR to the NCR value. This field is also found in the responses to a biometric Investigative search where it reflects the actual total number of candidates returned in the CNL field for the entire concatenated list. For EQRR, this field identifies the number of Identity History Summary reports that are be returned in response to an EQHR.

## Type-2 Element Data Dictionary

**NDR**      2.098      Name of Designated Repository      <ebts:RecordFBIRepositoryCode>

This field contains the numerical designation of the repository(ies) to be searched. Repository numbers are assigned by the CJIS Division. Multiple entries in this field will indicate a desire to search more than one repository, including Canada's RTID and authorized DHS records. Multiple entries in native encoding will be separated by the <sup>R</sup><sub>S</sub> separator.

The NDR values of 4 and 5 will be retired in the next version. The NDR value of 4 for Major Case Records is being subsumed into criminal (NDR=1) and civil (NDR=2). The NDR value of 5 for the Latent Image File Records will only be accessible to the internal Latent Laboratory Examiners, therefore will not be valid for use in this standard.

**Name of Designated Repository Code Table**

NDR Value	File Name
1	Criminal Master File Records
2	Civil Records
3	Unsolved Latent File
4	Reserved for FBI use
5	Reserved for FBI use
6	Repository for Individuals of Special Concern (RISC)
7	Canada Real Time Identification (RTID)
8	DoD Automated Biometric Identification System (ABIS)
9	DHS IDENT/US-VISIT
10	DHS IDENT/US-VISIT and LESC
11	RISC Wants and Warrants (W&W)
12	RISC Sexual Offender Registry (SOR)
13	RISC Known and Suspected Terrorist (KST)
14	RISC Foreign Subjects of Interest (FSI)
15	RISC Persons of Special Interest (Other)
16	Internal Use Only
17-19	Reserved for FBI Future Use
20 - 50	Reserved for Department of Defense
51 - 100	Reserved for FBI Future Use
101-199	FBI or Other Federal Organization Special Population Cognizant Files
200-399	Reserved for State/Local System
400-699	Reserved for External FBI Use
700-999	Reserved for FBI Future Use

**NIR**      2.2010      Number of Images Requested      <ebts:RecordImagesRequestedQuantity>

This optional field contains the number of maximum candidate images the submitter desires to receive in response to a biometric Investigative search request for a given candidate list. If multiple candidate lists are to be returned the NIR value applies to each. If NIR is omitted in a biometric investigative search request, it defaults to 20. This field is also found in the responses to a biometric Investigative search where it reflects the actual number of candidates with image returned in the CNL field for the entire concatenated list.

## Type-2 Element Data Dictionary

**NOT**      [2.088](#)      **Note Field**      <ebts:TransactionDescriptionText>

This free-text field is used to provide additional information regarding electronic latent submissions. For latent search identification results feedback, the NOT field will be used to indicate the candidate from the SRL that matched the search image. For ULM transactions, the NOT field will provide information related to latent search images that are candidates for comparison with the unsolved latent (e.g., case-related identifiers or point of contact information). For UHN transactions, the NOT field will contain case related information about the search transaction with the hit that generated the unsolicited notification.

**OCA**      [2.009](#)      **Originating Agency Case Number**      <nc:CaseTrackingID>

This field contains the one-to-twenty-character Originating Agency Case Identifier (OCA) assigned by the originating agency. This alphanumeric-special (ANS) field may contain any printable non-control 7-bit ASCII character with the exception of the period (.). The OCA must not begin with a blank.

**OCP**      [2.040](#)      **Occupation**      <nc:EmployeeOccupationText>

This free-text field contains the subject's occupation. The OCP returned in a response is the same as the one submitted.

**OFC**      [2.053](#)      **Offense Category**      <ebts:OffenseCategoryCode>

This field shall contain a "1" for a crime categorized as personal, a "2" for a crime categorized as property, and a "3" for a crime categorized as both.

**PAT**      [2.034](#)      **Pattern Level Classifications**      <ebts:FingerprintPatternClassificationCode>

This grouped field contains information about the finger(s) pattern types. It is composed of two subfields:

- Finger Position (FGP)
- Pattern Classification Code (PATCL)

PAT shall consist of two-character finger position code followed by the primary pattern type code as chosen from the following table. Up to two reference pattern classifications per finger are also allowed, thereby making the total number of pattern classes allowable per finger equal to three. For native encoding, if multiple pattern types are used for reference for the same finger, they shall be separated from each other by the US separator. Multiple fingers shall be separated by the RS separator. If submitting a Latent Fingerprint whose actual finger position is unknown, the PAT and FGP (2.074) fields are used in conjunction as follows to supply guesses for which finger position the latent print might be: place a "00" in the FGP subfield of PAT to indicate the actual position is unknown; place the actual pattern in the PATCL subfield; place one or more finger number guesses in the FGP field (2.074). For XML encoding, the FGP is repeated after the initial value of "00" to indicate one or more finger guesses.

The following is a native encoding example of the Pattern Level Classification field with only one pattern per finger.

```
2.034:01<US>WU<RS>02<US>LS<RS>03<US>LS<RS>04<US>LS<RS>05<US>LS<RS>06<US>RS<RS>07<US>
>RS<RS>08<US>LS<RS>09<US>RS<RS>10<US>RS<GS>
```

The following is a native encoding example of the Pattern Level Classification field with extra pattern references for some of the fingers.

```
2.034:01<US>RS<US>WU<US>AU<RS>02<US>RS<US>AU<US>WU<RS>03<US>WU<RS>04<US>RS<RS>05
<US>WU<RS>06<US>LS<RS>07<US>WU<RS>08<US>AU<RS>09<US>AU<RS>10<US>WU<US>AU<GS>
```

## Type-2 Element Data Dictionary

### Pattern Classification Code Tables

Two characters represent each finger as follows:

Finger Position	Code
Right thumb	01
Right index	02
Right middle	03
Right ring	04
Right little	05
Left thumb	06
Left index	07
Left middle	08
Left ring	09
Left little	10

The following is a list of acceptable CJIS pattern level fingerprint classifications.

Pattern	Code
Arch, Type Not Designated	AU
Whorl, Type Not Designated	WU
Right Slant Loop	RS
Left Slant Loop	LS
Complete Scar	SR
Amputation	XX
Unable to print (e.g. bandaged)	UP
Unable to Classify	UC

**PEN**      **2.078**      **Penetration Query Response**      <ebts:TransactionPenetrationQueryResponsePercent>

This field provides a response to the penetration query that includes a set of search parameters for a new search. The response will be an estimated size, in percentage, of the repository(s) that will be searched given the input parameters.

**PHT**      **2.036**      **“Photo Available” Indicator**      <ebts:PersonDigitalImageAvailableIndicator>

If a photograph of the subject is available, this field shall contain a “Y”; otherwise, the field shall be omitted. For XML encoding, this field is represented as a Boolean value. As NGI expands its support with new fields, this field will be retired in upcoming versions.

**POB**      **2.020**      **Place of Birth**      <ebts:PersonBirthPlaceCode>

The subject’s place of birth shall be entered in this field. Indicate in this POB field the state (Mexico or United States), territorial possession, province (Canada), or country of birth. The appropriate two letter abbreviation shall be used as listed in Appendix O. The criteria listed below shall also be considered when assigning POB.

## Type-2 Element Data Dictionary

**POB Values Table**

If the following conditions exist	Enter Code
POB stated as state AND country and applicable code not contained in Code Table; OR city can be ascertained as not being located in the United States; OR foreign POB and applicable code not contained in Code Table	YY
POB stated as only city AND city can be ascertained as being located in the United States	US
POB is Mexico or any Mexican state or province not in Code Table	MM
POB is "Mexico, Mexico"	MX
POB is unknown	XX

**POC**      2.2009      **Point of Contact**

This grouped field contains contact information associated with a biometric/identity enrolled in the RISC or SPC file. It is composed of two subfields:

- Name (organization or person)
- Phone Number

**POS**      2.2036      **Subject Pose**

Please refer to ANSI/NIST-ITL for the definition and values for field 10.020 POS.

**PPA**      2.035      **"Palmmprints Available" Indicator**      <ebts:PersonPalmPrintAvailableIndicator>

If palmmprints are available, this field shall contain a "Y"; otherwise, the field shall be omitted. For XML encoding, this field is represented as a Boolean value.

**PPD**      2.2030      **Print Position Descriptors**      <ebts:TransactionPrintPositionDescriptors>

This field will be present if and only if the finger position code "19" appears in Field 2.074. This field will consist of two mandatory information items:

- The first is the probable integer finger position code (0-10) taken from finger position table.
- The second information item is the code taken from Table P-1, found in Appendix P, to indicate the portion of the EJI or tip image that is a part of the transaction.

**PPD**      2.2028E,  
2.2032G,      **Print Position Descriptors**      <ebts:PrintPositionDescriptors>  
2.2033F

This PPD is a subfield to fields of Type Set. This subfield will be present if and only if the subfield Friction ridge Generalized Position code (FGP) or the Friction ridge Number(s) Requested (FNR) code "19" appears in the Set field. These PPD subfields have no subfields (unlike PPD 2.2030). This field shall consist of two mandatory information items. The first is the Probable Decimal finger Position code (0-10) taken from the ANSI/NIST-ITL specification. But for the finger position it must be a two character numeric; implying a leading zero for positions 0 thru 9. The second code information item is the Finger Image Code; it also is taken from the ANSI/NIST-ITL specification to indicate the portion of the EJI or tip image. There may be up to 8 such images for a single finger. Examples of valid values are: 01EJI or 10TIP.

## Type-2 Element Data Dictionary

**PRI**      2.076      **Priority**      <ebts:TransactionSearchPriorityCode>

This field shall indicate the priority of a latent search (from 1 to 3, with 1 being the highest priority). The priority levels will generally correspond to the following crime types in descending order of priority.

1. Homicide, rape, and special circumstances
2. Kidnap, assault, and robbery
3. Arson, drugs, personal crimes, and property crimes

Federal agencies will determine their own priority schemes. No additional validation of priorities will be provided.

**Note:** This field will be deprecated in the next release of this specification. Field 1.006 PRY will be used for all transaction types in NGI FOC.

**RAC**      2.025      **Race**      <nc:PersonRaceCode>

This field is used to indicate the race of the subject.

**Race Code Table**

If Subject Is	Enter Code
Chinese, Japanese, Filipino, Korean, Polynesian, Indian, Indonesian, Asian Indian, Samoan, or any other Pacific Islander	A
A person having origins in any of the black racial groups of Africa	B
American Indian, Eskimo, or Alaskan native, or a person having origins in any of the 48 contiguous states of the United States or Alaska who maintains cultural identification through tribal affiliation or community recognition	I
Of indeterminable race	U
Caucasian, Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, Regardless of race	W

**RAP**      2.070      **Request for Electronic Rap Sheet**      <ansi-nist:RecordRapSheetRequestIndicator>

The purpose of this field is to allow the contributors to optionally request an electronic identity history of the suspect. That identity history will be an IDRR if an identification was made and an NIDR if the submission resulted in a non-identification. A “Y” indicates that an identity history is desired, and an omitted field or an “N” indicates that no electronic identity history should be returned with the response. The XML encoding should contain “true” or “false”. For the RPIS TOT this field will request the NGI Identity History Summary.

**RAR**      2.205      **Return All Records Indicator**

This field is used to indicate that a search return all Rap Back Subscriptions that are routed through the sending ORI. If omitted the default is ‘N’, where only subscriptions owned by the sending ORI are returned.

**RBATN**      2.2070      **Rap Back Attention Indicator**

Available for the Subscriber to use in combination with the User Defined fields to link future Rap Back Activity Notifications to the right person or Section within the Subscribing Entity. The RBATN is returned on some Identity History Summaries provided to criminal justice agencies for criminal justice purposes.

**RBC**      2.2065      **Rap Back Category**

Used to identify the correct category of the subscription so that NGI will use correct Purpose Code when generating criminal history information. Category is a required field that must have one of the following values. The resulting Purpose Codes are also listed:

## Type-2 Element Data Dictionary

**Rap Back Category Values Table**

Rap Back Category	Code	Purpose Code
Firearms	F	F
Volunteer, Child Care/School Employee, Non-Criminal Justice Employment and Licensing	I	I
Criminal Justice Employment	J	J
Criminal Justice Investigative	CI	C
Criminal Justice – Supervision	CS	C
Security Clearance Information Act	S	S

**RBDI**      [2.2067](#)      **Rap Back Disclosure Indicator (criminal subscriptions only)**

For criminal justice subscriptions, to indicate whether the Rap Back Subscription should be visible on Rap Sheets generated to criminal justice agencies.

**RBMI**      [2.2039](#)      **Rap Back Maintenance Indicator**

Used in the Rap Back Maintenance Request Transaction (RBMNT) to indicate the type of maintenance action being requested:

- Replace
- Delete
- Append
- Cancel
- Renew
- Un-cancel

**RBNF**      [2.2062](#)      **Rap Back Activity Notification Format**

Under the Submitter/Subscriber Privacy Strategy, an indication of whether the Rap Back Activity Notification should be:

Pre-notification;  
Triggering Event;  
Identity History Summary to include the triggering event.

**RBNI**      [2.2041](#)      **Rap Back Activity Notification Identifier**

This number is provided to the Subscriber within the Rap Back Activity Notification when a future reported event matches against one of their Rap Back subscriptions in NGI. If the Subscriber indicated “Pre-Notification” or “Triggering Event” in the Rap Back Activity Notification Format field when setting the subscription, they will have to use the Identity History Summary Request transaction to see the updated criminal history record information of the person. The Subscriber must use the RBNI in that transaction.

**RBOO**      [2.2063](#)      **Rap Back Opt Out of In-State Indicator**

Boolean indicator set by Submitter for NGI to not send the Submitter notifications of events originating from within the Submitter’s own state. Defaults to NGI sending all notifications. Must be provided on all subscriptions for which Submitter does not want in-state notifications.

**RBR**      [2.2020](#)      **Rap Back Recipient**      <ebs:RecordRapBackOwnerOrganization>  
<nc:OrganizationIdentification>

This optional field is assigned to the Rap Back Service. This field tag acronym will be determined at a later date.

## Type-2 Element Data Dictionary

### 2.2069 **Triggering Event Details**

Note: The Triggering Event Details field is actually a set of three fields:

2.2069A DORBE – Date of Rap Back Event

2.2069B RBT – Rap Back Trigger

2.2069C RBEI – Rap Back Event Information

The Triggering Event Details will be provided within the Rap Back Activity Notification when either “Triggering Event” or “Identity History Summary and Triggering Event” is chosen as the Rap Back Activity Notification Format when the subscription is created

### **RBSD** 2.2054 **Rap Back Subscription Date**

Date the subscription is created. It is added to the subscription automatically by NGI. Returned to the Subscriber in the Search Results Electronic (SRE); the Rap Back Activity Notification (RBN); the Rap Back Renewal Notification (RBRN); the Rap Back Subscription Response (RBSR), which comes in reply to a Subsequent Subscription request; and some Rap Back Maintenance Response (RBMNTR) transactions.

### **RBSI** 2.2048 **Rap Back Subscription Identifier**

Unique number assigned by NGI that identifies the subscription as a whole. It is provided back to the Rap Back Submitter/Subscriber when the subscription is established. This number is required to perform maintenance on an existing subscription.

### **RBSL** 2.2050 **Rap Back Subscription List**

A compressed comma-separated-values (CSV) file with filename results.csv. Used to return Subscription Lists to Subscribers. See EBTS Section 3.3.3.2 Rap Back Subscription List Response (RBRPTR) for more information.

### **RBST** 2.2071 **Rap Back Subscription Term**

Length of the Term of the Subscription, during which time no additional fee will be charged for the Subscriber to validate their authority to subscribe to the individual and “extend” the subscription. Available Subscription Terms are 2, 5, or lifetime

### **RBT** 2.2040 **Rap Back Trigger**

Events that will cause future notifications to Submitter/Subscriber.

Automatically includes criminal tenprint retain transactions and NFF CPI submissions. Subscriber can add all the rest of the triggers, if desired. The “Civil Retain Submission” trigger will only be allowed for those federal agencies authorized to receive those events.

### **RBTD** 2.2049 **Rap Back Term Date**

The date identifying the end of the two-year, five-year, or lifetime fee paid by the Subscriber. It is added to the subscription automatically by NGI based upon the Rap Back Subscription Term field value in the Subscription Request. This date indicates when a new fee must be paid to continue the subscription. This date is separate from the Expiration Date and functions in relation to the Expiration Date as described in the Guide.

### **RBTED** 2.2069 **Rap Back Triggering Event Details**

This set of data elements provides detailed information about the event that triggered the Rap Back Notification (RBN). The data elements within RBTED are:

1. DORBE - Date of Rap Back Event
2. RBT - Rap Back Trigger
3. RBEI - Rap Back Event Information



## Type-2 Element Data Dictionary

### **RBUD**      [2.2064](#)      **Rap Back User Defined**

Appropriate use is determined by the Submitter.

Note: Each User Defined field is actually a set of two fields:

2.2064A – Rap Back Field Name: a 50 character field in which the Subscriber can place a user-defined name for this user defined field

2.2064B – Rap Back Field Text: a 100 character field in which the Subscriber places the user-defined text information. The Rap Back Field Text can contain additional linking information for the subscription such as SID, TCN, or OCA; more detailed contact information; reminder notes regarding the subscription; or any other relevant information. These fields are not disseminated on an Identity History Summary, rather they are returned to the SIB or Federal Submitting Agency with the Rap Back Activity Notifications.

### **RBXD**      [2.2015](#)      **Rap Back Expiration Date**      <ebts:RecordRapBackExpirationDate>

This optional field is assigned to the Rap Back Service. This field tag acronym will be determined at a later date.

### [2.052](#)      **Rap Back Request**      <ebts:RecordRapBackRequestCode>

This optional field is assigned to the Rap Back Service. This field tag acronym will be determined at a later date.

### [2.2011](#)      **Rap Back Verification Status**      <ebts:RecordRapBackVerificationIndicator>

This optional field is assigned to the Rap Back Service. This field tag acronym will be determined at a later date.

### **RCD1**      [2.091](#)      Ridge Core Delta One for Subpattern Classification      <ansi-nist:FingerPositionCode> <ansi-nist:RidgeCountValue>

This grouped field contains information about the finger(s) ridge counts and is used for Native Mode searches in conjunction with the Pattern Level Classification (PAT - 2.034). It is comprised of four subfields:

- 2.091-A Finger Position (FGP)
- 2.091-B Ridge Count Number 1 (RCN1)
- 2.091-C Ridge Count Number 1 Reference A (RCN1A)
- 2.091-D Ridge Count Number 1 Reference B (RCN1B)

For XML encoding, RCD1 and RCD2 are represented by a single grouping which contains the FGP and two ridge count elements. The information for each finger position, patterns, and ridge counts are grouped together within a parent element representing exactly one finger.



## Type-2 Element Data Dictionary

**REC**      [2.082](#)      **Response Code**      <ebts:TransactionResponseIndicator>

Natively, this one-byte alpha field will contain allowable values of “Y” or “N.” In XML, it is represented as a Boolean value. This field is used in the PDR and PRR transactions to indicate the status of the corresponding request. If the request contains any errors, the response code (REC) will be set to “N.” Otherwise it will be set to “Y.”

**RES**      [2.041](#)      **Residence of Person  
Fingerprinted**      <ebts:PersonResidenceLocation>

The subject’s residential address may be entered in this field as free text, including printable special characters and formatting characters (CR, LF, TAB). The RES returned in a response is the same as the one submitted. For the XML encoding, it contains sub-elements for the subject’s complete address location.

**RET**      [2.005](#)      **Retention Code**      <ansi-nist:RecordRetentionIndicator>

This is an alpha field indicating whether the information submitted as a part of a transaction is to be retained as a permanent part of the FBI’s Master File. Submit a “Y” for yes or an “N” for no. For XML encoding, this field is represented as a Boolean value.

**RFP**      [2.037](#)      **Reason Fingerprinted**      <nc:ActivityReasonText>

This alphanumeric-special field is used to indicate the purpose of a civil or applicant fingerprint card submission. Commas, blanks, dashes, hyphens, and slashes are all allowed as special characters. The submitting agency should indicate the specific statutory authority authorizing the fingerprint submission in this field.

*Option* : Agencies may choose to use standard terms in this field related to the purpose of the fingerprint submission instead of the specific statutory authority. The standard reasons are:

- Firearms
- Volunteer
- Criminal Justice Employment
- Child Care/School Employee
- Other Employment and Licensing

Note: The use of RFP requires coordination with FBI prior to use.

**RFR**      [2.095](#)      **Request Features Record**      <ebts:RecordFeaturesRequestIndicator>

This one-character alpha field is used to indicate a user’s desire to have CJIS return a Type-9 features record associated with an image requested during an Image Request or Latent Investigative Search. For an Image Request, the features or template will be returned in extended feature set of the Type-9 returned. For the Latent Investigative Search, the features and matched minutiae will be returned to allow for an overlay on the image for comparison purposes. An extended feature set will be returned if the RFR value equals “Y.” A features record will not be returned if the field is omitted (its use is optional) or if the value of RFR equals “N.” For XML encoding, this field is represented as a Boolean value.

**RPR**      [2.096](#)      **Request Photo Record**      <ebts:RecordPhotoRequestIndicator>

This one-character alpha field is used to indicate a user’s desire to have CJIS return a Type-10 photo record if one is on file and disseminable. For XML encoding, this field is represented as a Boolean value.

**RSC**      [2.2102](#)      **Reason Supervision  
Cancelled**      <ebts:SupervisedReleaseRevocationReasonText>

This 300 character free-text field is used by an agency requesting cancellation of a supervisory notification to indicate the reason a supervised release notification is being cancelled (i.e., supervision/parole/probation revoked, remanded to custody or prison, supervision completed, supervision cancelled, etc.). This field allows any 7-bit non-control character.

## Type-2 Element Data Dictionary

**RSR**

2.065

Repository Statistics  
Response

<ebts:TransactionRepositoryResponse>

This field contains a file generated by the NGI Latent Friction Ridge system that provides detailed statistics that can be used to estimate the level of penetration of the repository given a set of search parameters defined in the search request. This field is in the form of a large ASCII file that can contain up to 96,000 characters/bytes of alphanumeric-special (ANS) data. This field contains five subfields separated by tab characters:

- Parameter name
- Parameter Value
- the fraction of the Criminal file having that value of the parameter
- the fraction of the Civil file having that value of the parameter
- the fraction of the combined Criminal and Civil files having the value of the parameter.

In the native encoding formatting, the fields are "whitespace" (spaces and/or tabs) with DOS (Disk Operating System) end-of-line convention (CR+LR). A period character is used as a decimal point in the fraction values. The value should be interpreted as the proportion of records matching that category and code. Some records may specify multiple codes within the same category but such instances are undeterminable from this data. Data rows containing all zeroes will not be returned. See RSR Data Tables for examples and allowed parameter names.

### RSR Response Code Table

**Example of RSR Response Data**

Parameter	Value	Criminal	Civil	Combined
RACE	U	0.027	0.015	0.025
RACE	A	0.015	0.218	0.12
GENDER	X	0.001	0	0.001
GENDER	M	0.748	0.692	0.723
DOB	UNK	0.001	0.001	0.001
DOB	0	0	0.003	0.003
DOB	1	0.001	0.002	0.002
POB	AL	0.012	0.02	0.022
ARREST	TX	0.303	0.27	0.432
FINGER	0	0	0	0
FINGER	1	0.901	0.923	0.924
PALM	21	0.072	0	0.07
EJI	LEFT	0.081	0	0.08
EJI	DST01	0.038	0	0.035
ARCH	2	0.27	0.38	0.47
LEFTSLT	3	0.432	0.295	0.552
RIGHTSLT	4	0.47	0.501	0.59
WHORL	5	0.283	0.244	0.372

## Type-2 Element Data Dictionary

**RSR File Category Specification**

Definition	Parameter	Parameter Size	Parameter Values
Race	RACE	5	U, A, B, I, W
Gender	GENDER	7	X, M, N, G, Y, F, Z
Year of Birth	DOB	101	UNK, or last two digits of year
Place of Birth	POB	422	EBTS defined NCIC state and country code table
Place of Arrest	ARREST	422	EBTS defined NCIC state and country code table
Finger Positions	FINGER	11	EBTS defined finger codes: 00-10
Hand Positions	PALM	17	EBTS defined palm codes 20-36
EJI Positions	EJI	30	EBTS defined joint image segments for each finger. PRX01, DST01, PRX02, MED02, DST02, etc. and LEFT/RIGHT when only full EJI is identified
Arch	ARCH	10	EBTS defined finger codes: 01-10
Left Slant Loop	LEFTSLT	10	EBTS defined finger codes: 01-10
Right Slant Loop	RIGHTSLT	10	EBTS defined finger codes: 01-10
Whorl	WHORL	10	EBTS defined finger codes: 01-10

**SAN**      [2.099](#)      **State Arrest Number**      <j:ArrestSequenceID>

This field contains a unique arrest number assigned by the state to a criminal subject. The SAN is an optional element that may assist in matching the submitted disposition data to the correct court cycle. If present in the submission, this field should be returned in the response. Any printable 7-bit ASCII character with the exception of a period (.) is acceptable. Embedded blanks are not permitted. SAN must not begin with a blank.

**SCNA**      [2.086](#)      **Legacy Unsolved Latent Number**      <ebts:AFISSegmentControlID>

This field contains an alphanumeric identifier used to track or reference unsolved records. Legacy records that were deposited in the ULF prior to NGI Increment 3 will be referenced with their legacy SCNA. All other unsolved records will be referenced with a UCN in this field. The SCNA field is used, for example, to reference records in the ULF or UPF in the response to a latent or facial investigative search respectively.

**SCO**      [2.007](#)      **Send Copy To**      <ansi-nist:RecordForwardOrganizations>

The purpose of this 9-to-19-character alphanumeric-special (ANS) field is to indicate that additional electronic responses need to be forwarded to agencies other than the contributor by the State Identification Bureau. The first nine characters shall be alphanumeric and shall contain the NCIC assigned Originating Agency Identifier (ORI) for an agency who is to receive a copy of the response. At the option of the transmitting agency, the ORI may be expanded to a size of 19 characters, with 10 characters of alphanumeric-special (ANS) data appended to the end to assist in proper routing of the responses. However, no <US> or <RS> separator may be used between the ORI and routing extension (use any printable non-control ASCII special character (e.g., a slash) as a separator). Upon receiving an electronic response, the State Identification Bureau will forward a copy of the electronic response to each agency listed in the "SEND COPY TO" block. Must be an ORI.

## Type-2 Element Data Dictionary

**SDOB**      [2.2007](#)      **Submitted Date of Birth**      <ebts:PersonSubmittedBirthDate>

A date of birth as provided in a submission that is determined to be different than the date of birth in the record of the identified subject.

**SEAL**      [2.2019](#)      **Seal Arrest Flag**      <ebts:ArrestSealIndicator>

This is a one-byte field that will indicate whether the arrest is to be sealed upon establishment of the record identified on the CAR and CNA TOTs. The permissible values are ‘Y’ or ‘N’. For XML encoding, this field is represented as a Boolean value.

**SED**      [2.2100](#)      **Custody or Supervisory Status End Date.**      <ebts:CustodySupervisoryData><nc:EndDate>

This field contains the end date for the subject’s indicated custody or supervisory status. The date shall appear as an eight-digit number in the same format as specified in Section 1.1 of this appendix. The SED may not be less than the SSD. Edit checks on the CJIS will validate that the SED does not exceed 99 years from the record DOB.

**SEX**      [2.024](#)      [Sex](#)      <ebts:PersonSexCode>

This field is used to report the gender of the subject.

**Sex Code Table**

If Following Condition Exists	Enter Code
Subject’s gender reported as female	F
Occupation or charge indicated “Male Impersonator”	G
Subject’s gender reported as male	M
Occupation or charge indicated “Female Impersonator” or transvestite	N
Male name, no gender given	Y
Female name, no gender given	Z
Unknown gender	X

**SID**      [2.015](#)      **State Identification Number**      <nc:PersonStateIdentification>

This field contains any known state or territory identification number. The native encoding format is the standard two character abbreviation of the state name followed by the number. Embedded blanks are not permitted. SIDs from New York, Oregon, or Pennsylvania may contain a hyphen in the last position. The SID returned in a response is dependent upon the search results. The XML encoding will include subfields; one for the state code and one for the number itself.

**SII**      [2.2023](#)      **Supplementary Identity Information**      <ebts:TransactionSupplementaryIdentityInformationText>

This field will contain identity information not within the scope of the standard NGI Identity History Summary. The format and content of the information in this field may vary for different transactions.

**SLE**      [2.055](#)      **Custody or Supervisory Literal**      <ebts:SupervisionStatus> <nc:StatusText>

This field contains the free-text description of the subject’s custody or supervision status. The first character must not be blank. Entry of SLE requires that SSD also be entered.

## Type-2 Element Data Dictionary

**SMD**      [2.2058](#)      **SMT descriptors**      <ansi-nist:PhysicalFeaturesDescriptionDetail>

This field is used to describe the content of the SMT image to an extent greater than documented in Field 2.026: NCIC SMT code / SMT. It shall consist of one or more sets of information items. An SMT image consisting of several parts or sub-images shall use subfields to fully describe the various parts or features found in the total image. The first subfield shall describe the most predominant feature or sub-image contained in the SMT image. Subsequent repeating subfields shall describe additional portions of the image that are not part of the main or central focal point of the image. For example, a tattoo consisting of a man with a snake on the arm being followed by a dog may contain three subfields: one describing the man, a second describing the snake, and a third describing the dog.

- 1) SMI shall identify the type of SMT. It shall contain "SCAR" to indicate healed scar tissue that was the result an accident or medical procedure. "PIERCING" is a deliberately made hole through body tissue, usually to wear body ornamentation. An entry of "MARK" shall be used for the pattern resulting from needle or track marks. For deliberately applied or drawn images, the first information item shall contain "TATTOO" to indicate a common tattoo or indelible image resulting from the pricking of the skin with a coloring matter; "CHEMICAL" if the image was created by the use of chemicals to burn the image into the skin; "BRANDED" if the image was burned into the skin using a branding iron or other form of heat; or "CUT" if the image was caused by incision of the skin. The value for this information item is selected from the "Image sub-code" column of ANSI/NIST-ITL 1-2011 Table 58.
- 2) TAC shall be the general class code of tattoo chosen from the "Class Code" column of ANSI/NIST-ITL 1-2011 Table 67. This information item does not apply to scars and marks.
- 3) TSC shall be the appropriate subclass code selected from ANSI/NIST-ITL 1-2011 Table 67. For each general class of tattoo, there are several defined subclasses. This information item does not apply to scars and marks.
- 4) TDS shall be an optional text string that provides additional qualifiers to describe the image or portion of the image. This information item does not apply to scars and marks.

**SMS**      [2.2055](#)      **SMT size or size of injury  
or identifying characteristic**      <biom:PhysicalFeatureSize>

This optional field shall contain the dimensions of the portion of image contained in this record (it may be the entire scar, mark, tattoo, injury or identifying characteristic). It shall consist of two information items: height / HGT and width / WID. Each dimension shall be entered to the nearest centimeter.

**SMT**      [2.026](#)  
[2.2028G](#)  
[2.2032I](#)      **Scars, Marks and Tattoos**      <nc:PhysicalFeatureCategoryCode>  
[2.2033M](#)  
[2.2061D](#)

For each scar, mark, or tattoo present on the subject, the appropriate NCIC code shall be used in this information item. Blanks are allowed as special characters.

**SNAM**      [2.2008](#)      **Submitted Name**      <ebts:PersonSubmittedName>

A name as provided in a submission that is determined to be different than the name of record of an identified subject. This name will be formatted the same as other name fields (2.018).

**SOC**      [2.016](#)      **Social Security Account  
Number**      <nc:PersonSSNIdentification>

This field contains the subject's Social Security number if known. This number shall be entered as nine consecutive digits with no embedded punctuation characters. No foreign social security numbers shall be used.

## Type-2 Element Data Dictionary

**SRA**      [2.2104](#)    **Supervised Release Action**    <ebts:SupervisedReleaseActionCode>

A code from the following table is used by the contributor to indicate the type of maintenance desired when submitting a Maintenance Service Message. The minimum length and maximum length 3 bytes. The SRA and the CRI are both mandatory when the SRNR TOT is used. For supervision transfers, the Transfer Agency Supervision (TAS) code is used with the Supervision Transferred to (STT) field to identify the new supervision agency.

**SRA Values Table**

If the following condition exists:	Enter Code
Establish Agency Supervision	EAS
Cancel Agency Supervision	CAS
Transfer Agency Supervision	TAS

**SRF**      [2.059](#)    **Search Results Findings**    <ebts:TransactionSearchResultsCode>

This field is used in responses to submissions and contains a single character indicating the results of a comparison. The following table outlines the valid values, their meanings, and permissible submissions that may contain those values.

**SRF Values Table**

Value	Definition	TOT
C	Inconclusive	BDEC, LSR
G	Green, No Hit	RPISR
I	Identification	BDEC, LSR, SRE
M	Match of Images Submitted	FVR/SRE
N	Non-Identification	BDEC, LSR, SRE
P	Pending Verification of Identification	BDEC, LSR
R	Red, Hit on Potential Candidate, High Confidence Match	RPISR, UHN
Y	Yellow, Probable Candidate, Potential Match	RPISR, UHN/BDEC
X	Not a Match of Images Submitted	FVR/SRE

**SSD**      [2.054](#)    **Custody or Supervisory Status Start Date**    <ebts:CustodySupervisoryData> <nc:StartDate>

This field contains the start date for the subject's indicated custody or supervisory status. The date shall appear as an eight digit number in the same format as specified in Section 1.1 of this appendix. The SSD may not be less than DOA. The SSD shall not exceed the current date except when the submission originates from an international contributor located in a time zone earlier than the Eastern Time Zone. This date field shall contain the local date for the region submitting the request. Edit checks on the CJIS will accept the local date as valid up to 24 hours forward to accommodate the variance between international time zones. If custody data is submitted, all custody fields (SSD, OCA, and SLE) must be entered.

**SST**      [2.2101](#)    **Supervised Status Type**    <ebts:SupervisionStatusCode>

This field contains the three byte code that indicates the type of supervised released. If necessary, multiple types may be used for a supervised release notification. This is a mandatory field. The minimum number of occurrences is one, the maximum number is eight.



## Type-2 Element Data Dictionary

SST Values Table

If Following Conditions Exist	Enter Code
Bail Supervision	BLS
Conditional Release	CDR
Mandatory Release	MAN
Parole	PAR
Probation	PRO
Pretrial Diversion	PTD
Special Parole Term	SPT
Supervised Release	SUR

**STT**      [2.2103](#)      **Supervision Transferred To**      <ebts:SupervisionReceivingOrganizationID>

The purpose of this 9 character alphanumeric-special (ANS) field is to indicate that a Supervisory Agency who has an active supervised notification request attached to the Identity History wishes to transfer supervision of the offender to another supervisory agency. The characters shall be alphanumeric and shall contain the NCIC-assigned Originating Agency Identifier (ORI) for the agency who will become responsible for the offender's supervision. This field is mandatory when the SRA type is Transfer Agency Supervision (TAS). Must be an ORI. This field allows any 7-bit non-control character.

**TAA**      [2.087](#)      **Treat as Adult**      <ebts:PersonAdultTreatmentIndicator>

A one-byte optional field to indicate whether a juvenile is to be processed as an adult. A "Y" indicates yes; an omitted field indicates no. For XML encoding, this field is represented as a Boolean value. The TAA returned in a response is the same as the one submitted.

**TCL**      [2.2059](#)      **Tattoo color**

This field may contain one subfield corresponding to each subfield contained in Field 2.2058: SMT descriptors / SMD. Each subfield shall contain up to 6 information items that list the color(s) of the tattoo or part of the tattoo. For each subfield entry, the first one shall be the predominant color chosen from ANSI/NSIT-ITL 1-2011 Table 68. Additional colors may be entered as optional subsequent information items of the form tattoo color code n / TCn (n=2 through 6). There need not be more than one information item.

**TLI**      [2.2046](#)      **Tier Level Indicator**      <ebts:TierLevelIndicator>

A one-byte optional field to indicate what level of dissemination is appropriate for a retained identity. 1 = Share ALL, 2 = Share POC (ATN) Information Only, 3 = Silent Hit.

TLI Values Table

Definition	Code
Share ALL	1
Share POC (ATN) Information Only	2
Silent Hit	3

**TSR**      [2.043](#)      **Type of Search Requested**      <ebts:TransactionSearchRequestCategoryCode>

A one byte code shall be entered in this field from the following table to indicate the type of record being submitted. The field is applicable to the NFUF, CPDR, FNDR, NNDR, CPNU, DOCE, EMUF, and NFUE transactions.

## Type-2 Element Data Dictionary

**Type of Search Requested Code Table**

Type of Record	Code	Applicable TOT
Confidential Screening	C	CPDR, FNDR, NNDR
Suppress/Modify Unsolicited Want/SOR Notification (Non-Urgent Criminal)	H	CPNU**
Pre-commission candidate record with fingerprints	P	NFUF, DOCE, EMUF, NFUE
Civil submission in support of the National Child Protection Act of 1993	V	NFUF*, NFUE*

\* When submitting fingerprints using a TSR of V, the contributing agency should specify either the VCA/NCPA or a state statute in the RFP field. To be charged at the volunteer rate, the word "volunteer" must appear with or without the statute.

\*\*For Internal FBI use only.

**ULF**      2.083      **Unsolved Latent File**      <ebts:TransactionUnsolvedLatentFileIndicator>

This one-character alpha field is used to designate whether a latent image or features record in a search should be added to the Unsolved Latent File. Submit a "Y" for yes. If negative, submit "N". If the field is omitted, the default behavior will be "N". For XML encoding, this field is represented as a Boolean value.

**ULR**      2.2034      **Unsolved Latent Retained**      <ebts:RecordLatentRetentionIndicator>

This field is used in a Biometric Decision (BDEC) when the decision is a positive identification and the user requests that the unsolved record be retained in the unsolved file. A value of "Y" indicates that the latent record should be retained in the ULF. No value or a value of "N" indicates that the user does not want the unsolved record retained.

**WGT**      2.029      **Weight**      <nc:PersonWeightMeasure> <nc:MeasurePointValue>

In this field, the subject's weight in pounds is entered. If weight is unknown, 000 is entered. All weights in excess of 499 pounds will be set to 499 lbs. WGT must be in the range 050 to 499 lbs. (however, there is no minimum range limit for missing persons or unknown persons).

**WTR**      2.030      **Weight Range**      <nc:PersonWeightMeasure> <nc:MeasureRangeValue>

If a range of weight is given, it shall be expressed as two three digit numbers indicating the minimum and maximum weights (in pounds) of the subject. There shall be no separator character used between the weights. WTR must be in the range 050 to 499 lbs. (however, there is no minimum range limit for missing persons or unknown persons).

Table C-1 Field Edit Specifications for Type-2 Elements

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators) Min			
2.001	LEN	LOGICAL RECORD LENGTH	N	2	1	2.001:909<GS>	
2.002	IDC	INFORMATION DESIGNATION CHARACTER	N	1	1	2.002:00<GS>	
2.003	FFN	FBI FILE NUMBER	N	10	1	2.003:2537597861<GS>	
2.005	RET	RETENTION CODE	A	1	1	2.005:Y<GS>	
2.006	ATN	ATTENTION INDICATOR	ANS	3	1	2.006:SA J Q DOE, RM 11867<GS>	Any printable 7-bit ASCII character with the exception of the period is allowed.
2.007	SCO	SEND COPY TO	ANS	9	9	2.007:NY030025P<GS>	Any printable 7-bit ASCII character is allowed.
2.009	OCA	ORIGINATING AGENCY CASE NUMBER	ANS	1	1	2.009:Q880312465<GS>	Any printable 7-bit ASCII character is allowed, excluding a period (.).
2.010	CIN	CONTRIBUTOR CASE IDENTIFIER NUMBER	SET		5		
2.010A	CIN_PRE	CONTRIBUTOR CASE PREFIX (CIN_PRE)	ANS	1		2.010:INCIDENT	
2.010B	CIN_ID	CONTRIBUTOR CASE ID (CIN_ID)	ANS	1		NUMBER<US>1963BRT715<GS>	Any printable 7-bit ASCII character is allowed.
2.011	CIX	CONTRIBUTOR CASE IDENTIFIER EXTENSION	N	2	5	2.011:23<GS>	
2.012	LCN	FBI LATENT CASE NUMBER	ANS	11	1	2.012:MX-12345678<GS>	First two characters may be AN, followed by a hyphen, -, remaining characters and AN
2.013	LCX	FBI LATENT CASE EXTENSION	N	5	1	2.013:98765<GS>	
2.014	FBI	FBI NUMBER	AN	1	1000	2.014:62760NY12<GS>	
2.015	SID	STATE IDENTIFICATION NUMBER	ANS	3	1000	2.015:NY12345678<GS>	NY, OR, and PA may use a hyphen in the last position
2.016	SOC	SOCIAL SECURITY ACCOUNT NUMBER	N	9	4	2.016:220565855<GS>	
2.017	MNU	MISCELLANEOUS IDENTIFICATION NUMBER	ANS	4	4	2.017:PP-1234567890P<GS>	A hyphen is allowed as a special character
2.018	NAM	NAME	AS	3	1	2.018:JONES, ANTHONY P<GS>	Commas, hyphens and blanks are all allowed as special characters.
2.019	AKA	ALIASES	AS	3	10	2.019:JONES, TONY<RS>JONES, A P<GS>	Hyphens, commas, and blanks are all allowed as special characters.
2.020	POB	PLACE OF BIRTH	A	2	1	2.020:VA<GS>	
2.021	CTZ	COUNTRY OF CITIZENSHIP	A	2	10	2.021:US<GS>	
2.022	DOB	DATE OF BIRTH	N	8	5	2.022:19790815<GS>	
2.023	AGR	AGE RANGE	N	4	1	2.023:1619<GS>	Estimated age range entered using a pair of two digit numbers
2.024	SEX	SEX	A	1	1	2.024:M<GS>	
2.025	RAC	RACE	A	1	1	2.025:W<GS>	
2.026	SMT	SCARS, MARKS, AND TATTOOS	A	3	10	2.026:MISS L TOE<GS>	Blanks are allowed as special characters.
2.027	HGT	HEIGHT	AN	3	1	2.027:601<GS>	
2.028	HTR	HEIGHT RANGE	AN	6	1	2.028:508603<GS>	
2.029	WGT	WEIGHT	N	3	1	2.029:182<GS>	
2.030	WTR	WEIGHT RANGE	N	6	1	2.030:175190<GS>	
2.031	EYE	COLOR EYES	A	3	1	2.031:BLU<GS>	
2.032	HAI	HAIR COLOR	A	3	1	2.032:BRO<GS>	
2.033	FPC	NCIC FINGERPRINT CLASSIFICATION	AN	20	1	2.033:AAXXP158PMXM62POTTDI<GS>	

**Table C-1 Field Edit Specifications for Type-2 Elements**

Field Number	Identifier	Field Name	Character	Field Size (not including Character Separators)		Max Occurrences	Example	Comments/Special Characters
				Min				
2.034	PAT	PATTERN LEVEL CLASSIFICATIONS	SET			10	2.034:01<US>WU<RS>02<US>LS<RS>03<US>LS<RS>04<US>LS<RS>05<US>LS<RS>06<US>RS<RS>07<US>RS<RS>08<US>LS<RS>09<US>RS<RS>10<US>RS<GS>	
2.034A	FGP	FINGER NUMBER	N	2		1		
2.034B	PATCL	PATTERN CLASSIFICATION CODE	A	2		3		
2.035	PPA	PALM PRINTS AVAILABLE INDICATOR	A	1		1	2.035:Y<GS>	
2.036	PHT	PHOTO AVAILABLE INDICATOR	A	1		1	2.036:Y<GS>	
2.037	RFP	REASON FINGERPRINTED	ANS	1		1	2.037:CONSIDERING FOR EMPLOYMENT<GS>	Commas, blanks, dashes, hyphens, and slashes are all allowed as special characters
2.038	DPR	DATE PRINTED	N	8		1	2.038:19950324<GS>	
2.039	EAD	EMPLOYER AND ADDRESS	ANS	1		1	2.039:ACE CONSTRUCTION COMPANY,327 MAPLE AVE, BUFFALO,NY<GS>	Any printable 7-bit ASCII character is allowed.
2.040	OCP	OCCUPATION	ANS	1		1	2.040:PLUMBER<GS>	Any printable 7-bit ASCII character is allowed.
2.041	RES	RESIDENCE OF PERSON FINGERPRINTED	ANS	1		1	2.041:5021 OAK LEAF DRIVE, BUFFALO NY, USA., 14221<GS>	Any printable 7-bit ASCII character is allowed.
2.042	MIL	MILITARY CODE	A	1		1	2.042:M<GS>	
2.043	TSR	TYPE OF SEARCH REQUESTED	A	1		1	2.043:P<GS>	
2.044	GEO	GEOGRAPHICAL AREA OF SEARCH	A	2		5	2.044:MD<GS>	
2.045	DOA	DATE OF ARREST	N	8		1	2.045:19950324<GS>	
2.047	ASL	ARREST SEGMENT LITERAL	SET			40		
2.047A	DOO	DATE OF OFFENSE (DOO)	N	8			2.047:DUI<RS>19940920<US>POSSESSION OF FIREARMS<GS>	Any printable 7-bit ASCII character is allowed.
2.047B	AOL	ARREST OFFENSE LITERAL (AOL)	ANS	1				Any printable 7-bit ASCII character is allowed.
2.049	EID	EMPLOYEE IDENTIFICATION NUMBER	AN	1		1	2.049:USSS123456<GS>	
2.051	CSL	COURT SEGMENT LITERAL	SET			40		
2.051A	CDD	COURT DISPOSITION DATE (CDD)	N	8			2.051:19940930<US>DUI<US>5 DAYS JAIL, PAY COURT COSTS<RS>	Any printable 7-bit ASCII character is allowed.
2.051B	COL	COURT OFFENSE LITERAL (COL)	ANS	1			19940930<US>POSSESSION OF FIREARMS<US>10 DAYS JAIL, PAY COURT COSTS, \$50<GS>	Any printable 7-bit ASCII character is allowed.
2.051C	CPL	OTHER COURT SENTENCE PROVISION LITERAL (CPL)	ANS	1				Any printable 7-bit ASCII character is allowed.
2.051D	CDN	COURT DISPOSITION	A	1		32		Text Value from CDN Values Table
2.052*	*tbd	REQUEST FOR RAP BACK SERVICE (FUTURE CAPABILITY)	N	1			2.052:1<GS>	
2.053	OFC	OFFENSE CATEGORY	N	1		1	2.053:1<GS>	
2.054	SSD	CUSTODY OR SUPERVISORY STATUS - START DATE	N	8		1	2.054:19940930<GS>	
2.055	SLE	CUSTODY OR SUPERVISORY STATUS LITERAL	ANS	1		1	2.055:RELEASED BY COURT ORDER<GS>	Any printable 7-bit ASCII character is allowed. . First character must not be blank.
2.056	ICO	IDENTIFICATION COMMENTS	ANS	1		1	2.056:ARMED AND DANGEROUS<GS>	Any printable 7-bit ASCII character is allowed.
2.057	FNR	FINGER NUMBER(S) REQUESTED	N	2		13	2.057:01<RS>06<RS>10<GS>	
2.059	SRF	SEARCH RESULTS FINDINGS	A	1		1	2.059:N<GS>	

**Table C-1 Field Edit Specifications for Type-2 Elements**

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators) Min			
2.060	MSG	STATUS/ERROR MESSAGE	ANS	1	11	2.060:MATCH MADE AGAINST SUBJECTS FINGERPRINTS ON 05/01/94. PLEASE NOTIFY SUBMITTING STATE IF MATCH RESULTS<GS>	Any printable 7-bit ASCII character is allowed.
2.061	CST	CASE TITLE	ANS	1	1	2.061:ARMED ROBBERY FIRST COUNTY<GS>	Any printable 7-bit ASCII character is allowed.
2.062	IMT	IMAGE TYPE	N	1	1000	2.062:1<RS>2<RS>3<RS>4<RS>5<GS>	
2.064	CAN	CANDIDATE LIST	SET		99	2.064:273849CA2<US>BROWN,JOHN D<RS>83625NY<US>COLLINS,TERRY G<GS>	Commas, hyphens, or blanks are all allowed as special characters.
2.064A	UCN	UNIVERSAL CONTROL (UCN) NUMBER	AN	1			Commas, hyphens, or blanks are all allowed as special characters.
2.064B	NAM	NAME (NAM)	AS	3			Commas, hyphens, or blanks are all allowed as special characters.
2.065	RSR	REPOSITORY STATISTICS RESPONSE	ANS	1	1	2.065:(ASCII TEXT DATA)<GS>	Period (as decimal point), Tab (as field delimiter), Newline (as record separator)
2.067	IMA	IMAGE CAPTURE EQUIPMENT	SET		1	2.067:DBI<US>1134<US>12345<GS>	Any printable 7-bit ASCII character is allowed.
2.067A	MAK	ORIGINATING FINGERPRINT READING SYSTEM MAKE (MAK)	ANS	1			Any printable 7-bit ASCII character is allowed.
2.067B	MODL	ORIGINATING FINGERPRINT READING SYSTEM MODEL (MODL)	ANS	1			Any printable 7-bit ASCII character is allowed.
2.067C	SERNO	ORIGINATING FINGERPRINT READING SYSTEM SERIAL NUMBER (SERNO)	ANS	1			Any printable 7-bit ASCII character is allowed.
2.070	RAP	REQUEST FOR ELECTRONIC RAP SHEET	A	1	1	2.070:Y<GS>	
2.071	ACN	ACTION TO BE TAKEN	ANS	0	1	2.071:IF NON-IDENT, SUBMIT TO UNSOLVED LATENT FILE<GS>	Commas, hyphens, ampersands, slashes, number signs, and blanks are all allowed as special characters.
2.072	FIU	FINGERPRINT IMAGE(S) UPDATED	AN	1	13	2.072:01<US>02<US>05<US>07<US>08<US>11<US>13<GS>	
2.073	CRI	CONTROLLING AGENCY IDENTIFIER	ANS	9	3	2.073:NY0303000<GS>	
2.074	FGP	FINGER POSITION	N	2	99	2.074:01<RS>02<RS>03<RS>04<RS>05<RS>06<RS>07<RS>08<RS>09<RS>10<GS>	
2.075	ERS	ELECTRONIC RAP SHEET	ANS	4	1	2.075:<rap sheet example here><GS>	Any printable 7-bit ASCII character is allowed.
2.076	PRI	PRIORITY	N	1	1	2.076:1<GS>	
2.078	PEN	PENETRATION QUERY RESPONSE	N	2	1	2.078:10<GS>	
2.079	NCR	NUMBER OF CANDIDATES' RETURNED	N	1	1	2.079:10<GS>	Max for Biometric Investigative requests = 99 Max for Biometric Investigative search = 99 When omitted in request = NIR max (20)
2.080	EXP	RESPONSE EXPLANATION	ANS	1	1	2.080:PHOTO NOT FOUND FOR SPECIFIED DOA DOS<GS>	Any printable 7-bit ASCII character is allowed.
2.082	REC	RESPONSE CODE	A	1	1	2.082:Y<GS>	
2.083	ULF	UNSOLVED LATENT FILE	A	1	1	2.083:Y<FS>	
2.084	AMP	AMPUTATED OR BANDAGED	SET		13	2.084:03<US>XX<RS>09<US>UP<GS>	
2.084A	FGP	FINGER NUMBER (FGP)	N	2			

**Table C-1 Field Edit Specifications for Type-2 Elements**

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators) Min			
2.084B	AMPCD	AMPUTATED OR BANDAGED CODE (AMPCD)	A	2			SR can only be entered by an ITN/FBI Service Provider
2.085	CRN	CIVIL RECORD NUMBER	AN	9	1	2.085:V12345678<GS>	
2.086	SCNA	LEGACY UNSOLVED LATENT NUMBER	AN	1	1	2.086:3124<GS>	
2.087	TAA	TREAT AS ADULT	A	1	1	2.087:Y<GS>	
2.088	NOT	NOTE FIELD	ANS	1	1	2.088:NOTE<GS>	Any printable 7-bit ASCII character is allowed.
2.089	MSC	MATCHSCORE	N	1	99	2.089:1200<GS>	
2.091	RCD1	RIDGE CORE DELTA ONE FOR SUBPATTERN CLASSIFICATION	SET		10	2.091:01<US>13<RS>02<US>06<RS>03<US>11<RS>04<US>10<RS>05<US>11<RS>06<US>11<RS>07<US>12<RS>08<US>10<RS>09<US>13<RS>10<US>11<GS>	
2.091A	FGP	FINGER NUMBER (FGP)	N	2	1		
2.091B	RCN1	RIDGE COUNT NUMBER 1 (RCN1)	N	1	3		
2.092	RCD2	RIDGE CORE DELTA TWO FOR SUBPATTERN CLASSIFICATION	SET		10	2.092:01<US>10<RS>02<US>0<RS>03<US>0<RS>04<US>0<RS>05<US>0<RS>06<US>0<RS>07<US>0<RS>08<US>0<RS>09<US>0<RS>10<US>0<GS>	
2.092A	FGP	FINGER NUMBER (FGP)	N	2	1		
2.092B	RCN2	RIDGE COUNT NUMBER 2 (RCN2)	N	1	3		
2.094	CCN	COURT CASE NUMBER	ANS	1	0	2.094:NY123456789<GS>	This is a unique number assigned by the state or federal court system to identify a specific court event occurrence in a subject identity history record. The CCN is an optional element that may assist in matching the submitted disposition data to the correct court cycle. If present in the submission, this field should be returned in the response. Any printable 7-bit ASCII character with the exception of a period (.) is acceptable. Embedded blanks are not permitted. A CCN must not begin with a blank.
2.095	RFR	REQUEST FEATURES RECORD	A	1	1	2.095:Y<GS>	
2.096	RPR	REQUEST PHOTO RECORD	A	1	1	2.096:Y<GS>	
2.098	NDR	NAME OF DESIGNATED REPOSITORY	N	1	10	2.098:1<GS>	
2.099	SAN	STATE ARREST NUMBER	ANS	0	0	2.099:NY123456789<GS>	This field contains a unique arrest number assigned by the state to a criminal subject. The SAN is an optional element that may assist in matching the submitted disposition data to the correct court cycle. If present in the submission, this field should be returned in the response. Any printable 7-bit ASCII character with the exception of a period (.) is acceptable. Embedded blanks are not permitted. SAN must not begin with a blank.
2.2001	NAM1	NAME-ONE (Future Capability)	AS	1	0	2.2001:SMITH<GS>	Any 7-bit non-Ctrl character
2.2002	NAM2	NAME-TWO (Future Capability)	AS	1	0	2.2002:BRIAN<GS>	Any 7-bit non-Ctrl character
2.2003	NAM3	NAME-THREE (Future Capability)	AS	1	0	2.2003:DAVID<GS>	Any 7-bit non-Ctrl character
2.2004	NAM4	NAME-FOUR (Future Capability)	AS	1	0	2.2004:MAHFOUZ<GS>	Any 7-bit non-Ctrl character
2.2005	NAM5	NAME-FIVE (Future Capability)	AS	1	0	2.2005:al ARABI<GS>	Any 7-bit non-Ctrl character
2.2006	CSF	CASCADED SEARCH FLAG (Future Capability)	A	2	0	2.2006:CR<GS>	
2.2007	SDOB	SUBMITTED DATE OF BIRTH	N	8	0	2.2007:10470123<GS>	

**Table C-1 Field Edit Specifications for Type-2 Elements**

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators) Min			
2.2008	SNAM	SUBMITTED NAME	AS	3	0	2.2008:JONES, ANTHONY P<GS>	Commas, hyphens and blanks are all allowed as special characters.
2.2009	POC	POINT OF CONTACT	SET		1	2.2009:Uncle Sam Biometric Support Center<RS>304-555-1212<GS>	Point of Contact information for biometrics enrolled in RISC or SPC. Must be reachable 24/7.
2.2009A'	NAM	NAME	AS	1	1		
2.2009B'	PHONE	PHONE NUMBER	AS	6	1		
2.2010	NIR	NUMBER OF IMAGES REQUESTED	N	0	1	2.2010:2<GS>	NIR max for Biometric Investigative Request = 20 NIR when omitted in request = 20 Max images in response to Biometric Investigative Search is (NIR) 20x3=60
2.2011*	*tbd	RAP BACK VERIFICATION STATUS (Future Capability)	A	1	0	2.2011:Y<GS>	
2.2012	IIR	IRIS IMAGES REQUESTED (Future Capability)	N	1	0	2.2012:0<GS>	
2.2014*	*tbd	RAP BACK ELIGIBILITY (Future Capability)	A	1	0	2.2014:Y<GS>	
2.2015	RBXD	RAP BACK EXPIRATION DATE	N	8	1	2.2015:20100101<GS>	
2.2016	DNAF	DNA FLAG (Future Capability)	A	1	0	2.2016:N<GS>	
2.2017	DORI	DNA LOCATION (Future Capability)	AN	9	0	2.2017:TX9876543<GS>	
2.2018	DNAC	DNA IN CODIS FLAG (Future Capability)	N	1	0	2.2018:Y<FS>	
2.2019	SEAL	SEAL ARREST FLAG (Future Capability)	A	1	0	2.2019:N<GS>	
2.2020	RBR	RAP BACK RECIPIENT	ANS	9	9	2.2020:NY0303000<GS>	
2.2021	IFS	IDENTIFICATION FIREARMS SALES (Future Capability)	A	1	0	2.2021:D<GS>	
2.2022	CIDN	CONTRIBUTOR ASSIGNED IDENTIFICATION NUMBER	AN	10	1	2.2022:CINR12345<GS>	
2.2023	SII	SUPPLEMENTARY IDENTITY INFORMATION	ANS	4	1	2.2023:<sample SII content><GS>	Any printable 7-bit ASCII character is allowed.
2.2024	HTI	HIT TYPE INDICATOR	A	1	1	2.2024:RISC<GS>	
2.2025	GEO_TIME	GEOGRAPHIC COORDINATE DATE TIME STAMP (Future Capability)	AN	15	0	2.305:201002041400500z<GS>	
2.2026	GEO_CORD	GEOGRAPHIC COORDINATE LOCATION (Future Capability)	SET		0		Period, Plus, Hyphen Period 2.306:43<US>02<US>55<US>123<US>14<US>35<GS> Period Period, Plus, Hyphen Period Period
2.2026A	LATD	LATITUDE DEGREE (Future Capability)	NS	1	1		
2.2026B	LATM	LATITUDE MINUTE (Future Capability)	NS	1	1		
2.2026C	LATS	LATITUDE SECOND (Future Capability)	NS	1	1		
2.2026D	LOND	LONGITUDE DEGREE (Future Capability)	NS	1	1		
2.2026E	LONM	LONGITUDE MINUTE (Future Capability)	NS	1	1		
2.2026F	LONS	LONGITUDE SECOND (Future Capability)	NS	1	1		
2.2027	DATUM_ID	GEOGRAPHIC COORDINATE DATUM (Future Capability)	ANS	4	0	2.307:AIRY<GS>	Slash, Hyphen
2.2028	BID	BIOMETRIC IMAGE DESCRIPTION	SET		1000		2.2029:9283463<GS>
2.2028A	UCN	FBI NUMBER/UCN	AN	1			
2.2028B	IMT	IMAGE TYPE	N	1			
2.2028C	BSI	BIOMETRIC SET IDENTIFIER	N	4			
2.2028D	FNR	FINGER NUMBER REQUESTED	N	2			
2.2028E	PPD	PRINT POSITION DESCRIPTOR	AN	5			
2.2028F	POS	SUBJECT POSE	A	1			
2.2028G	SMT	NCIC SMT CODE					
2.2029	BSI	BIOMETRIC SET IDENTIFIER	N	4	1000	2.2029:9283463<GS>	
2.2030	PPD	PRINT POSITION DESCRIPTOR	SET		1	2.3030:02<US>FV1<GS>	
2.2030A	FGP	FRICTION RIDGE GENERALIZED POSITION	N	1			
2.2030B	FIC	FINGER IMAGE CODE	AN	3			

Table C-1 Field Edit Specifications for Type-2 Elements

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators)			
				Min			
2.2031	BIA	BIOMETRIC IMAGE AVAILABLE	N	1	1	2.23031:13<GS>	
2.2032	ATR	AUDIT TRAIL RECORD	SET		100		
2.2032A	ORI	ORIGINATING AGENCY IDENTIFIER	AN	9			
2.2032B	DAT	DATE OF DISSEMINATION	N	8			
2.2032C	TOT	TOT OF DISSEMINATION	A	3			
2.2032D	BSI	BIOMETRIC SET IDENTIFIER DISSEMINATED	N	4		2.2029:9283463<GS>	
2.2032E	IMT	IMAGE TYPE DISSEMINATED	N	1			
2.2032F	FNR	FRICION RIDGE POSITION REQUESTED	N	2			
2.2032G	PPD	PRINT POSITION DESCRIPTION	AN	5			
2.2032H	POS	SUBJECT POSE	A	1			
2.2032I	SMT	NCIC SMT CODE					
2.2033	CNL	CANDIDATE INVESTIGATIVE LIST	SET		297		CNL max will be NCR (99)x3=297
2.2033A	UCN	FBI NUMBER/UCN	AN	1			
2.2033B	NAM	MASTER NAME	ANS	3			NAM values separated by commas
2.2033C	BSI	BIOMETRIC SET IDENTIFIER	N	4		2.2029:9283463<GS>	
2.2033D	IMT	IMAGE TYPE	N	1			
2.2033E	FGP	FRICION RIDGE GENERALIZED POSITION	N	2			
2.2033F	PPD	PRINT POSITION DESCRIPTOR	AN	5			
2.2033G	MSC	MATCH SCORE	N	1			
2.2033H	BIA	BIOMETRIC IMAGE AVAILABLE	N	1			
2.2033I	NDR	NAME OF DESIGNATED REPOSITORY	NS	1			NDR values separated by commas
2.2033J	IDC	INFORMATION DESIGNATION CHARACTER	N	1			
2.2033K	NOT	NOTE FIELD	ANS	1			Any printable 7-bit ASCII character is allowed.
2.2033L	POS	SUBJECT POSE	A	1			
2.2033M	SMT	NCIC SMT CODE	A	3			
2.2034	ULR	UNSOLVED LATENT RETAINED	A	1	0	2.2034:Y<GS>	
2.2035	EVI	EVENT IDENTIFIER	N	4	0	2.2029:9283463<GS>	
2.2036	POS	SUBJECT POSE	A	1	1	2.2036:F<GS>	
2.2037	ESI	EXTERNAL SUBJECT IDENTIFIER					
2.2039	RBMI	RAP BACK MAINTENANCE INDICATOR	A	1	1	2.2039:D<GS>	
2.2040	RBT	RAP BACK TRIGGER	N	1	40	2.2040:7<GS>	
2.2041	RBNI	RAP BACK ACTIVITY NOTIFICATION IDENTIFIER	N	4	10		Field should not include any leading zeroes.
2.2046	TLI	TIER LEVEL INDICATOR					
2.2047	RAR	RETURN ALL RECORDS INDICATOR	A	1	1	2.2047:Y<GS>	
2.2048	RBSI	RAP BACK SUBSCRIPTION IDENTIFIER	N	4	1		Field should not include any leading zeroes.
2.2049	RBTD	RAP BACK TERM DATE	N	8	1	2.2049:19940930<GS>	
2.2050	RBSL	RAP BACK SUBSCRIPTION LIST	ANS	1	1		Compressed CSV file with filename results.csv
2.2052	MAI	MAINTENANCE ACTION INDICATOR					
2.2053	DSPSET	DISPOSITION SET					
2.2054	RBSD	RAP BACK SUBSCRIPTION DATE	N	8	1	2.2054:19940930<GS>	
2.2055	SMS	SMT SIZE	SET				
2.2058	SMD	SMT DESCRIPTORS	SET				
2.2059	TCL	TATTOO COLOR	SET				
2.2061	BIE	BIOMETRIC IMAGE ENROLLMENT	SET		36		
2.2061A	BSI	BIOMETRIC SET IDENTIFIER	N	4	1	2.2029:9283463<GS>	
2.2061B	IMT	IMAGE TYPE	N	1	1		



**Table C-1 Field Edit Specifications for Type-2 Elements**

Field Number	Identifier	Field Name	Character	Field Size	Max Occurrences	Example	Comments/Special Characters
				(not including Character Separators) Min			
2.2061C	POS	SUBJECT POSE	A	1	1		POS and SMT are optional, when IMT=9 POS is populated, and when IMT=10 SMT is populated.
2.2061D	SMT	SCARS, MARKS, AND TATTOOS	A	3	1		POS and SMT are optional, when IMT=9 POS is populated, and when IMT=10 SMT is populated.
2.2062	RBNF	RAP BACK ACTIVITY NOTIFICATION FORMAT	N	1	1	2.2062:2<GS>	
2.2063	RBOO	RAP BACK OPT OUT IN-STATE INDICATOR	A	1	1	2.2063:Y<GS>	
2.2064	RBUD	RAP BACK USER DEFINED	Set		10		
2.2064A	RBFN	RAP BACK FIELD NAME	ANS	0	1		
2.2064B	RBFT	RAP BACK FIELD TEXT	ANS	0	1		
2.2065	RBC	RAP BACK CATEGORY	A	1	1	2.2065:CS<GS>	
2.2067	RBDI	RAP BACK DISCLOSURE INDICATOR	A	1	1	2.2067:Y<GS>	
2.2068	DTR	RAP BACK EXPIRATION DATE RANGE	N	16	1	2.2068:1994093019950930<GS>	Expressed as two eight-character values formatted as described DOB. The first eight characters indicating the earliest date of expiration and the second eight characters the latest date of expiration. There will be no separator character used between the two dates.
2.2069	RBTE	RAP BACK TRIGGERING EVENT DETAILS	Set		10		
2.2069A	DORBE	DATE OF RAP BACK EVENT	N	8	1		
2.2069B	RBT	RAP BACK TRIGGER	N	1	1		
2.2069C	RBEI	RAP BACK EVENT INFORMATION	ANS	1	1		Values listed in Table M-1
2.2070	RBATN	RAP BACK ATTENTION INDICATOR	ANS	3	1	2.2070:DET J Q PUBLIC<GS>	Field should not include any periods ('.')
2.2071	RBST	RAP BACK SUBSCRIPTION TERM	AN	1	1	2.2071:1<GS>	
2073	BIL	BIOMETRIC IMAGE LIST	Set				
2.2073A	SI	SUBJECT IDENTIFIER	AN	1	50		
2.2073B	BSI	BIOMETRIC SET IDENTIFIER	N	4	24		
2.2073C	BCD	BIOMETRIC CAPTURE DATE	N	8	8		
2.2073D	IMT	IMAGE TYPE	N	1	2		
2.2100	SED	CUSTODY OR SUPERVISORY STATUS -END DATE	N	8	1	2.2100:19940930<GS>	
2.2101	SST	SUPERVISED STATUS TYPE	A	3	8	2.2101:MAN<GS>	
2.2102	RSC	REASON SUPERVISION CANCELLED	ANS	1	1	2.2102:REVOKED.20120215<GS>	
2.2103	STT	SUPERVISION TRANSFERRED TO	ANS	9	1	2.2103:NY0303000<GS>	
2.2104	SRA	SUPERVISED RELEASED ACTION	A	3	1	2.2104:EAS<GS>	

# APPENDIX D: SUMMARY LOGICAL RECORD LAYOUTS FOR TYPE-2 IDENTIFICATION AND VERIFICATION TRANSACTIONS

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## 1.0 Introduction

Appendix D presents the summary logical record layouts for Identification and Verification transactions. Table D-1 is a summary representation of all Identification and Verification transactions. For detailed specifications of individual fields of these record sets, see Appendix C.

## 2.0 Interpretation of the Table

The column headers at the top of the page select a particular transaction. The row headers in the left margin give the tag number and ID for each field. The cell at the intersection of any given row and column gives summary information about the use of that field (row) in that transaction (column). If that cell is blank, the field is not used in that record. Otherwise, the number at the right in the cell gives the maximum number of occurrences of that field for that record. If the cell is shaded, then the field's inclusion is optional for that record; unshaded cells indicate mandatory inclusion. The diagonal pattern represents future initiatives, field tags, and type of transactions. In all cases, the minimum number of occurrences for a mandatory field is one, and zero for an optional field. Finally, the superscript in the upper left-hand corner of the cell is a reference to any note. See Appendix D Reference Notes following Table D-1, pertaining to the use of that field in the record.

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	AMN	CAR	CNA	CPDR	CPNU	DEK	DEU	DOCE	EMUJ	ERRT	FANC
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>											
<a href="#">2.005 RET</a>	1	1	1 <sup>1</sup>	1	1	1	1	1	1		1
<a href="#">2.006 ATN</a>	0..1	0..1		0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
<a href="#">2.007 SCO</a>	0..9	0..9		0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9
<a href="#">2.009 OCA</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
<a href="#">2.010 CIN</a>											
<a href="#">2.011 CIX</a>											
<a href="#">2.012 LCN</a>											
<a href="#">2.013 LCX</a>											
<a href="#">2.014 FBI</a>		0..5 <sup>5</sup>	0..5 <sup>5</sup>	0..5 <sup>5</sup>	0..5 <sup>5</sup>	0..5		0..5	0..5	0..5	0..5
<a href="#">2.015 SID</a>		0..1 <sup>6</sup>	0..1 <sup>6</sup>	0..1 <sup>6</sup>	0..1 <sup>6</sup>	0..1		0..1	0..1	0..1	
<a href="#">2.016 SOC</a>		0..4	0..4	0..4	0..4	0..4		0..4	0..4		0..4
<a href="#">2.017 MNU</a>	0..4	0..4	0..4	0..4	0..4	0..4	0..4	0..4	0..4	0..4	0..4 <sup>3</sup>
<a href="#">2.018 NAM</a>	1 <sup>4</sup>	1	1	1	1	1	1 <sup>4</sup>	1	1		1
<a href="#">2.019 AKA</a>		0..10	0..10	0..10	0..10	0..10		0..10	0..10		0..10
<a href="#">2.020 POB</a>		1	1	1	1	0..1		1	1		1
<a href="#">2.021 CTZ</a>	0..10	0..10	0..10	0..10	0..10	0..10	0..10	0..10	0..10		0..10
<a href="#">2.022 DOB</a>	1..5 <sup>4</sup>	1..5	1..5	1..5	1..5	1..5	1..5 <sup>4</sup>	1..5	1..5		1..5
<a href="#">2.023 AGR</a>											
<a href="#">2.024 SEX</a>	1	1	1	1	1	1	1	1	1		1
<a href="#">2.025 RAC</a>	1	1	1	1	1	1	0..1	1	1		1
<a href="#">2.026 SMT</a>	0..10	0..10	0..10	0..10	0..10	0..10	0..10	0..10	0..10		0..10
<a href="#">2.027 HGT</a>	1	1	1	1	1	1	1	1	1		1
<a href="#">2.028 HTR</a>											
<a href="#">2.029 WGT</a>	1	1	1	1	1	1	1	1	1		1
<a href="#">2.030 WTR</a>											
<a href="#">2.031 EYE</a>	1	1	1	1	1	1	1	1	1		1
<a href="#">2.032 HAI</a>	1	1	1	1	1	1	1	1	1		1
<a href="#">2.033 FPC</a>											
<a href="#">2.034 PAT</a>											
<a href="#">2.035 PPA</a>		0..1	0..1	0..1	0..1	0..1					

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	AMN	CAR	CNA	CPDR	CPNU	DEK	DEU	DOCE	EMUF	ERRT	FANC
<a href="#">2.036 PHT</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1				
<a href="#">2.037 RFP</a>		0..1						1	1		1
<a href="#">2.038 DPR</a>	1					1	1	1	1		1
<a href="#">2.039 EAD</a>		0..1	0..1	0..1	0..1	0..1		0..1	0..1		0..1
<a href="#">2.040 OCP</a>		0..1	0..1	0..1	0..1			0..1	0..1		0..1
<a href="#">2.041 RES</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1		0..1
<a href="#">2.042 MIL</a>									0..1		0..1
<a href="#">2.043 TSR</a>				1	0..1			0..1	0..1		
<a href="#">2.044 GEO</a>											
<a href="#">2.045 DOA</a>		1	1	1	1						
<a href="#">2.047 ASL</a>		1..40 <sup>2</sup>	1..40 <sup>2</sup>	1..40 <sup>2</sup>	1..40 <sup>2</sup>						
<a href="#">2.049 EID</a>											
<a href="#">2.051 CSL</a>		0..40	0..40	0..40	0..40						
<a href="#">2.053 OFC</a>											
<a href="#">2.054 SSD</a>		0..1	0..1	0..1	0..1						
<a href="#">2.055 SLE</a>		0..1 <sup>9</sup>	0..1 <sup>9</sup>	0..1 <sup>9</sup>	0..1 <sup>9</sup>						
<a href="#">2.056 ICO</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1				
<a href="#">2.057 FNR</a>											
<a href="#">2.059 SRF</a>											
<a href="#">2.060 MSG</a>										1..11	
<a href="#">2.061 CST</a>											
<a href="#">2.062 IMT</a>											
<a href="#">2.064 CAN</a>											
<a href="#">2.065 RSR</a>											
<a href="#">2.067 IMA</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1		0..1
<a href="#">2.070 RAP</a>	0..1	0..1		0..1	0..1	0..1	0..1	0..1	0..1		0..1
<a href="#">2.071 ACN</a>	0..1										
<a href="#">2.072 FIU</a>											
<a href="#">2.073 CRI</a>	1..3	1..3	1..3	1..3	1..3	1..3	1..3	1..3	1..3	0..3	1..3
<a href="#">2.074 FGP</a>											
<a href="#">2.075 ERS</a>											
<a href="#">2.076 PRI</a>											
<a href="#">2.078 PEN</a>											

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	<a href="#">AMN</a>	<a href="#">CAR</a>	<a href="#">CNA</a>	<a href="#">CPDR</a>	<a href="#">CPNU</a>	<a href="#">DEK</a>	<a href="#">DEU</a>	<a href="#">DOCE</a>	<a href="#">EMUF</a>	<a href="#">ERRT</a>	<a href="#">FANC</a>
<a href="#">2.079 NCR</a>											
<a href="#">2.080 EXP</a>											
<a href="#">2.082 REC</a>											
<a href="#">2.083 ULF</a>											
<a href="#">2.084 AMP</a>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>		0..1 <sup>7</sup>
<a href="#">2.085 CRN</a>											
<a href="#">2.086 SCNA</a>											
<a href="#">2.087 TAA</a>		0..1	0..1	0..1	0..1						
<a href="#">2.088 NOT</a>											
<a href="#">2.089 MSC</a>											
<a href="#">2.091 RCD1</a>											
<a href="#">2.092 RCD2</a>											
<a href="#">2.094 CCN</a>											
<a href="#">2.095 RFR</a>											
<a href="#">2.096 RPR</a>		0..1		0..1	0..1				0..1	0..1	0..1
<a href="#">2.098 NDR</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1		0..1
<a href="#">2.099 SAN</a>											
<a href="#">2.2001 NAM1</a>											
<a href="#">2.2002 NAM2</a>											
<a href="#">2.2003 NAM3</a>											
<a href="#">2.2004 NAM4</a>											
<a href="#">2.2005 NAM5</a>											
<a href="#">2.2006 CSF</a>											
<a href="#">2.2007 SDOB</a>										0..1	

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	AMN	CAR	CNA	CPDR	CPNU	DEK	DEU	DOCE	EMUJ	ERRT	FANC
<a href="#">2.2008 SNAM</a>										0..1	
<a href="#">2.2009 POC</a>											
<a href="#">2.2010 NIR</a>											
<a href="#">2.2011 *tbd</a>											
<a href="#">2.2012 IIR</a>											
<a href="#">2.2014 *tbd</a>											
<a href="#">2.2015 RBXD</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2016 DNAF</a>											
<a href="#">2.2017 DORI</a>											
<a href="#">2.2018 DNAC</a>											
<a href="#">2.2019 SEAL</a>											
<a href="#">2.2020 RBR</a>		0..9		0..9	0..9				0..9		0..9
<a href="#">2.2021 IFS</a>											
<a href="#">2.2022 CIDN</a>											
<a href="#">2.2023 SII</a>											
<a href="#">2.2024 HTI</a>											
<a href="#">2.2025 GEO_TIME</a>											
<a href="#">2.2026 GEO_CORD</a>											
<a href="#">2.2027 DATUM_ID</a>											
<a href="#">2.2028 BID</a>											
<a href="#">2.2029 BSI</a>											
<a href="#">2.2030 PPD</a>											
<a href="#">2.2031 BIA</a>											

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	AMN	CAR	CNA	CPDR	CPNU	DEK	DEU	DOCE	EMUF	ERRT	FANC
<a href="#">2.2032 ATR</a>											
<a href="#">2.2033 CNL</a>											
<a href="#">2.2034 ULR</a>											
<a href="#">2.2035 EVI</a>											
<a href="#">2.2037 ESI</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2038 XRS</a>											
<a href="#">2.2039 RBMI</a>											
<a href="#">2.2040 RBT</a>		0..40		0..40	0..40				0..40		0..40
<a href="#">2.2041 RBNI</a>											
<a href="#">2.2042 IAQ</a>											
<a href="#">2.2043 ITVFI</a>											
<a href="#">2.2044 RISCF</a>											
<a href="#">2.2045 FSI</a>											
<a href="#">2.2046 TLI</a>											
<a href="#">2.2047 RAR</a>											
<a href="#">2.2048 RBSI</a>											
<a href="#">2.2049 RBDT</a>											
<a href="#">2.2050 RBSL</a>											
<a href="#">2.2051HNOTI</a>											
<a href="#">2.2052 MAI</a>											
<a href="#">2.2053 DSPSET</a>											
<a href="#">2.2054 RBSD</a>											
<a href="#">2.2055 SMS</a>											
<a href="#">2.2058 SMD</a>											
<a href="#">2.2059 TCL</a>											
<a href="#">2.2060 IVFI</a>											
<a href="#">2.2061 BIE</a>											
<a href="#">2.2062 RBNF</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2063 RBOO</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2064 RBUD</a>		0..10		0..10	0..10				0..10		0..10
<a href="#">2.2065 RBC</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2067 RBDI</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2068 DTR</a>											

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	AMN	CAR	CNA	CPDR	CPNU	DEK	DEU	DOCE	EMUJ	ERRT	FANC
<a href="#">2.2069 RBTED</a>											
<a href="#">2.2070 RBATN</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2071 RBST</a>		0..1		0..1	0..1				0..1		0..1
<a href="#">2.2100 SED</a>											
<a href="#">2.2101 SST</a>											
<a href="#">2.2103 RSC</a>											

Note:  
 - Blank cells indicate the element is not used  
 - If one number then Min and Max of range is the same.



**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FAUF	FDSP	FIDR	FNDR	FVR	LFS	LSR	MAP	MPR	NFUE
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>						0..1	0..1			
<a href="#">2.005 RET</a>	1	1	1	1	1			1	1	1
<a href="#">2.006 ATN</a>	0..1	0..1	0..1	0..1	0..1	1	0..1	0..1	0..1	0..1
<a href="#">2.007 SCO</a>	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9
<a href="#">2.009 OCA</a>	0..1	0..1	1	0..1	0..1			0..1	0..1	0..1
<a href="#">2.010 CIN</a>										
<a href="#">2.011 CIX</a>										
<a href="#">2.012 LCN</a>							0..1			
<a href="#">2.013 LCX</a>							0..1			
<a href="#">2.014 FBI</a>	0..5	0..5	0..5	0..5	1		0..1 <sup>10</sup>	0..5		0..5
<a href="#">2.015 SID</a>		0..1			0..1		0..5 <sup>10</sup>	0..1		0..1
<a href="#">2.016 SOC</a>	0..4	0..4	0..4	0..4	0..4		0..4 <sup>11</sup>	0..4	0..4	0..4
<a href="#">2.017 MNU</a>	0..4 <sup>3</sup>	0..1	0..4	0..4 <sup>3</sup>	0..4	0..4	0..4 <sup>11</sup>	0..4	0..4	0..4
<a href="#">2.018 NAM</a>	1	1	1	1	1		0..1 <sup>10</sup>	1	1	1
<a href="#">2.019 AKA</a>	0..10	0..10	0..10	0..10	0..10		0..10	0..10	0..10	0..10
<a href="#">2.020 POB</a>	1	0..1	0..1	1	1	0..1	0..1 <sup>10</sup>	1	0..1	1
<a href="#">2.021 CTZ</a>	0..10	0..10	0..10	0..10	0..10		0..10 <sup>11</sup>	0..10	0..10	0..10
<a href="#">2.022 DOB</a>	1..5	0..5	0..5	1..5	1..5		0..5 <sup>11</sup>	1..5	1..5	1..5
<a href="#">2.023 AGR</a>						0..1				
<a href="#">2.024 SEX</a>	1	0..1	0..1	1	0..1	0..1	0..1 <sup>11</sup>	1	1	1
<a href="#">2.025 RAC</a>	1	0..1	0..1	1	0..1	0..1	0..1 <sup>11</sup>	1	1	1
<a href="#">2.026 SMT</a>	0..10	0..10	0..10	0..10	0..10	0..10	0..10 <sup>11</sup>	0..10	0..10	0..10
<a href="#">2.027 HGT</a>	1	0..1	0..1	1	0..1		0..1 <sup>11</sup>	1	1	1
<a href="#">2.028 HTR</a>						0..1				
<a href="#">2.029 WGT</a>	1	0..1	0..1	1	0..1		0..1 <sup>11</sup>	1	1	1
<a href="#">2.030 WTR</a>						0..1				
<a href="#">2.031 EYE</a>	1	0..1	0..1	1	0..1	0..1	0..1 <sup>11</sup>	1	1	1
<a href="#">2.032 HAI</a>	1	0..1	0..1	1	0..1	0..1	0..1 <sup>11</sup>	1	1	1
<a href="#">2.033 FPC</a>							0..1			
<a href="#">2.034 PAT</a>						0..10	0..10 <sup>11</sup>			
<a href="#">2.035 PPA</a>							0..1			

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	<a href="#">FAUF</a>	<a href="#">FDSP</a>	<a href="#">FIDR</a>	<a href="#">FNDR</a>	<a href="#">FVR</a>	<a href="#">LFS</a>	<a href="#">LSR</a>	<a href="#">MAP</a>	<a href="#">MPR</a>	<a href="#">NFUE</a>
<a href="#">2.036 PHT</a>									0..1	
<a href="#">2.037 RFP</a>	1		1	1				1		1
<a href="#">2.038 DPR</a>	1	1	1	1	1		0..1	1	1	1
<a href="#">2.039 EAD</a>	0..1			0..1				0..1	0..1	0..1
<a href="#">2.040 OCP</a>	0..1			0..1				0..1	0..1	0..1
<a href="#">2.041 RES</a>	0..1			0..1				0..1	0..1	0..1
<a href="#">2.042 MIL</a>	0..1			0..1	0..1					
<a href="#">2.043 TSR</a>				1	0..1					0..1
<a href="#">2.044 GEO</a>						0.5				
<a href="#">2.045 DOA</a>		1								
<a href="#">2.047 ASL</a>						0..40 <sup>3</sup>				
<a href="#">2.049 EID</a>										
<a href="#">2.051 CSL</a>										
<a href="#">2.053 OFC</a>						1				
<a href="#">2.054 SSD</a>										
<a href="#">2.055 SLE</a>										
<a href="#">2.056 ICO</a>					0..1				0..1	
<a href="#">2.057 FNR</a>										
<a href="#">2.059 SRF</a>							1			
<a href="#">2.060 MSG</a>							0..1			
<a href="#">2.061 CST</a>						1	1			
<a href="#">2.062 IMT</a>										
<a href="#">2.064 CAN</a>										
<a href="#">2.065 RSR</a>										
<a href="#">2.067 IMA</a>	0..1	0..1	0..1	0..1	0..1	0..1		0..1	0..1	0..1
<a href="#">2.070 RAP</a>	0..1	0..1	0..1	0..1	0..1	0..1		0..1	0..1	0..1
<a href="#">2.071 ACN</a>							0..1		0..1	
<a href="#">2.072 FIU</a>										
<a href="#">2.073 CRI</a>	1..3	0..3	3	1..3	1..3	0..3	0..3	1..3	1..3	1..3
<a href="#">2.074 FGP</a>						0..10	0..10			
<a href="#">2.075 ERS</a>							0..1			
<a href="#">2.076 PRI</a>						1				
<a href="#">2.078 PEN</a>										

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FAUF	FDSP	FIDR	FNDR	FVR	LFS	LSR	MAP	MPR	NFUE
<a href="#">2.079 NCR</a>										
<a href="#">2.080 EXP</a>										
<a href="#">2.082 REC</a>										
<a href="#">2.083 ULF</a>						0..1				
<a href="#">2.084 AMP</a>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>			0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>
<a href="#">2.085 CRN</a>										
<a href="#">2.086 SCNA</a>										
<a href="#">2.087 TAA</a>										
<a href="#">2.088 NOT</a>						0..1				
<a href="#">2.089 MSC</a>										
<a href="#">2.091 RCD1</a>										
<a href="#">2.092 RCD2</a>										
<a href="#">2.094 CCN</a>										
<a href="#">2.095 RFR</a>										
<a href="#">2.096 RPR</a>	0..1	0..1		0..1		0..1		0..1		0..1
<a href="#">2.098 NDR</a>	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1	0..1
<a href="#">2.099 SAN</a>										
<a href="#">2.2001 NAM1</a>										
<a href="#">2.2002 NAM2</a>										
<a href="#">2.2003 NAM3</a>										
<a href="#">2.2004 NAM4</a>										
<a href="#">2.2005 NAM5</a>										
<a href="#">2.2006 CSF</a>										
<a href="#">2.2007 SDOB</a>										

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FAUF	FDSP	FIDR	FNDR	FVR	LFS	LSR	MAP	MPR	NFUE
<a href="#">2.2008 SNAM</a>										
<a href="#">2.2009 POC</a>			1							
<a href="#">2.2010 NIR</a>										
<a href="#">2.2011 *tbd</a>										
<a href="#">2.2012 IIR</a>										
<a href="#">2.2014 *tbd</a>										
<a href="#">2.2015 RBXD</a>	0..1			0..1				0..1		0..1
<a href="#">2.2016 DNAF</a>										
<a href="#">2.2017 DORI</a>										
<a href="#">2.2018 DNAC</a>										
<a href="#">2.2019 SEAL</a>		1								
<a href="#">2.2020 RBR</a>	0..9			0..9				0..9		0..9
<a href="#">2.2021 IFS</a>										
<a href="#">2.2022 CIDN</a>										
<a href="#">2.2023 SII</a>										
<a href="#">2.2024 HTI</a>										
<a href="#">2.2025 GEO_TIME</a>										
<a href="#">2.2026 GEO_CORD</a>										
<a href="#">2.2027 DATUM_ID</a>										
<a href="#">2.2028 BID</a>										
<a href="#">2.2029 BSI</a>										
<a href="#">2.2030 PPD</a>						0..10				
<a href="#">2.2031 BIA</a>							0..1			

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FAUF	FDSP	FIDR	FNDR	FVR	LFS	LSR	MAP	MPR	NFUE
<a href="#">2.2032 ATR</a>										
<a href="#">2.2033 CNL</a>										
<a href="#">2.2034 ULR</a>										
<a href="#">2.2035 EVI</a>										
<a href="#">2.2037 ESI</a>	0..1			0..1				0..1		0..1
<a href="#">2.2038 XRS</a>										
<a href="#">2.2039 RBMI</a>										
<a href="#">2.2040 RBT</a>	0..40			0..40				0..40		0..40
<a href="#">2.2041 RBNI</a>										
<a href="#">2.2042 IAQ</a>										
<a href="#">2.2043 ITVFI</a>										
<a href="#">2.2044 RISCF</a>										
<a href="#">2.2045 FSI</a>		1..40								
<a href="#">2.2046 TLI</a>										
<a href="#">2.2047 RAR</a>										
<a href="#">2.2048 RBSI</a>										
<a href="#">2.2049 RBTB</a>										
<a href="#">2.2050 RBSL</a>										
<a href="#">2.2051HNOTI</a>										
<a href="#">2.2052 MAI</a>										
<a href="#">2.2053 DSPSET</a>										
<a href="#">2.2054 RBSD</a>										
<a href="#">2.2055 SMS</a>										
<a href="#">2.2058 SMD</a>										
<a href="#">2.2059 TCL</a>										
<a href="#">2.2060 IVFI</a>										
<a href="#">2.2061 BIE</a>			1							
<a href="#">2.2062 RBNF</a>	0..1			0..1				0..1		0..1
<a href="#">2.2063 RBOO</a>	0..1			0..1				0..1		0..1
<a href="#">2.2064 RBUD</a>	0..10			0..10				0..10		0..10
<a href="#">2.2065 RBC</a>	0..1			0..1				0..1		0..1
<a href="#">2.2067 RBDI</a>	0..1			0..1				0..1		0..1
<a href="#">2.2068 DTR</a>										

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	<a href="#">FAUF</a>	<a href="#">FDSP</a>	<a href="#">FIDR</a>	<a href="#">FNDR</a>	<a href="#">FVR</a>	<a href="#">LFS</a>	<a href="#">LSR</a>	<a href="#">MAP</a>	<a href="#">MPR</a>	<a href="#">NFUE</a>
<a href="#">2.2069 RBTED</a>										
<a href="#">2.2070 RBATN</a>	0..1			0..1				0..1		0..1
<a href="#">2.2071 RBST</a>	0..1			0..1				0..1		0..1
<a href="#">2.2100 SED</a>										
<a href="#">2.2101 SST</a>										
<a href="#">2.2103 RSC</a>										

Note:  
 - Blank cells indicate the element is not used  
 - If one number then Min and Max of range is the same.

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUF	NNDR	RPIS	RPISR	SRE
<a href="#">2.001 LEN</a>	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1
<a href="#">2.003 FFN</a>					
<a href="#">2.005 RET</a>	1	1			
<a href="#">2.006 ATN</a>	0..1	0..1	1	1	0..1
<a href="#">2.007 SCO</a>	0..9	0..9			0..9
<a href="#">2.009 OCA</a>	0..1	0..1	0..1	0..1	0..1
<a href="#">2.010 CIN</a>					
<a href="#">2.011 CIX</a>					
<a href="#">2.012 LCN</a>					
<a href="#">2.013 LCX</a>					
<a href="#">2.014 FBI</a>	0..5	0..5		0..2	0..1 <sup>8</sup>
<a href="#">2.015 SID</a>	0..1				0..1
<a href="#">2.016 SOC</a>	0..4	0..4			
<a href="#">2.017 MNU</a>	0..4	0..4 <sup>3</sup>			
<a href="#">2.018 NAM</a>	1	1	0..1	0..1	1
<a href="#">2.019 AKA</a>	0..10	0..10			
<a href="#">2.020 POB</a>	1	1		0..1	
<a href="#">2.021 CTZ</a>	0..10	0..10			
<a href="#">2.022 DOB</a>	1..5	1..5	0..1		0..1
<a href="#">2.023 AGR</a>					
<a href="#">2.024 SEX</a>	1	1	0..1		
<a href="#">2.025 RAC</a>	1	1			
<a href="#">2.026 SMT</a>	0..10	0..10			
<a href="#">2.027 HGT</a>	1	1			
<a href="#">2.028 HTR</a>					
<a href="#">2.029 WGT</a>	1	1			
<a href="#">2.030 WTR</a>					
<a href="#">2.031 EYE</a>	1	1			
<a href="#">2.032 HAI</a>	1	1			
<a href="#">2.033 FPC</a>					
<a href="#">2.034 PAT</a>					
<a href="#">2.035 PPA</a>					

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUF	NNDR	RPIS	RPISR	SRE
<a href="#">2.036 PHT</a>					
<a href="#">2.037 RFP</a>	1	1			
<a href="#">2.038 DPR</a>	1	1			
<a href="#">2.039 EAD</a>	0..1	0..1			0..1
<a href="#">2.040 OCP</a>	0..1	0..1			0..1
<a href="#">2.041 RES</a>	0..1	0..1			0..1
<a href="#">2.042 MIL</a>		0..1			
<a href="#">2.043 TSR</a>	0..1	1			
<a href="#">2.044 GEO</a>					
<a href="#">2.045 DOA</a>					
<a href="#">2.047 ASL</a>					
<a href="#">2.049 EID</a>					
<a href="#">2.051 CSL</a>					
<a href="#">2.053 OFC</a>					
<a href="#">2.054 SSD</a>					
<a href="#">2.055 SLE</a>					
<a href="#">2.056 ICO</a>					
<a href="#">2.057 FNR</a>					
<a href="#">2.059 SRF</a>				1	1
<a href="#">2.060 MSG</a>				0..1	0..11
<a href="#">2.061 CST</a>					
<a href="#">2.062 IMT</a>					
<a href="#">2.064 CAN</a>					
<a href="#">2.065 RSR</a>					
<a href="#">2.067 IMA</a>	0..1	0..1	0..1	0..1	
<a href="#">2.070 RAP</a>	0..1	0..1	0..1		
<a href="#">2.071 ACN</a>				0..1	
<a href="#">2.072 FIU</a>					
<a href="#">2.073 CRI</a>	1..3	1..3	1..3	0..3	1..3
<a href="#">2.074 FGP</a>					
<a href="#">2.075 ERS</a>				0..1	0..1
<a href="#">2.076 PRI</a>					
<a href="#">2.078 PEN</a>					



**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUJ	NNDR	RPIS	RPISR	SRE
<a href="#">2.079 NCR</a>					
<a href="#">2.080 EXP</a>					
<a href="#">2.082 REC</a>					
<a href="#">2.083 ULF</a>					
<a href="#">2.084 AMP</a>	0..1 <sup>7</sup>	0..1 <sup>7</sup>	0..1 <sup>7</sup>		
<a href="#">2.085 CRN</a>					1 <sup>8</sup>
<a href="#">2.086 SCNA</a>					
<a href="#">2.087 TAA</a>					0..1
<a href="#">2.088 NOT</a>				1	
<a href="#">2.089 MSC</a>					
<a href="#">2.091 RCD1</a>					
<a href="#">2.092 RCD2</a>					
<a href="#">2.094 CCN</a>					
<a href="#">2.095 RFR</a>					
<a href="#">2.096 RPR</a>	0..1	0..1	0..1		
<a href="#">2.098 NDR</a>	0..1	0..1	10		0..1
<a href="#">2.099 SAN</a>					
<a href="#">2.2001 NAM1</a>					
<a href="#">2.2002 NAM2</a>					
<a href="#">2.2003 NAM3</a>					
<a href="#">2.2004 NAM4</a>					
<a href="#">2.2005 NAM5</a>					
<a href="#">2.2006 CSF</a>					
<a href="#">2.2007 SDOB</a>					0..1

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUJ	NNDR	RPIS	RPISR	SRE
<a href="#">2.2008 SNAM</a>					0..1
<a href="#">2.2009 POC</a>					
<a href="#">2.2010 NIR</a>					
<a href="#">2.2011 *tbd</a>					
<a href="#">2.2012 IIR</a>					
<a href="#">2.2014 *tbd</a>					
<a href="#">2.2015 RBXD</a>	0..1	0..1			0..1
<a href="#">2.2016 DNAF</a>					
<a href="#">2.2017 DORI</a>					
<a href="#">2.2018 DNAC</a>					
<a href="#">2.2019 SEAL</a>					
<a href="#">2.2020 RBR</a>	0..9	0..9			0..9
<a href="#">2.2021 IFS</a>					
<a href="#">2.2022 CIDN</a>					
<a href="#">2.2023 SII</a>				0..1	
<a href="#">2.2024 HTI</a>					
<a href="#">2.2025 GEO_TIME</a>					
<a href="#">2.2026 GEO_CORD</a>					
<a href="#">2.2027 DATUM_ID</a>					
<a href="#">2.2028 BID</a>					
<a href="#">2.2029 BSI</a>					
<a href="#">2.2030 PPD</a>					
<a href="#">2.2031 BIA</a>					0..1

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUF	NNDR	RPIS	RPISR	SRE
<a href="#">2.2032 ATR</a>					
<a href="#">2.2033 CNL</a>					
<a href="#">2.2034 ULR</a>					
<a href="#">2.2035 EVI</a>					0..1
<a href="#">2.2037 ESI</a>	0..1	0..1			0..1
<a href="#">2.2038 XRS</a>					0..1
<a href="#">2.2039 RBMI</a>					
<a href="#">2.2040 RBT</a>	0..40	0..40			0..40
<a href="#">2.2041 RBNI</a>					
<a href="#">2.2042 IAQ</a>					
<a href="#">2.2043 ITVFI</a>					
<a href="#">2.2044 RISCF</a>					
<a href="#">2.2045 FSI</a>					
<a href="#">2.2046 TLI</a>					
<a href="#">2.2047 RAR</a>					
<a href="#">2.2048 RBSI</a>					0..1
<a href="#">2.2049 RBTD</a>					0..1
<a href="#">2.2050 RBSL</a>					
<a href="#">2.2051HNOTI</a>					
<a href="#">2.2052 MAI</a>					
<a href="#">2.2053 DSPSET</a>					
<a href="#">2.2054 RBSD</a>					0..1
<a href="#">2.2055 SMS</a>					
<a href="#">2.2058 SMD</a>					
<a href="#">2.2059 TCL</a>					
<a href="#">2.2060 IVFI</a>					0..1
<a href="#">2.2061 BIE</a>					0..36
<a href="#">2.2062 RBNF</a>	0..1	0..1			0..1
<a href="#">2.2063 RBOO</a>	0..1	0..1			0..1
<a href="#">2.2064 RBUD</a>	0..10	0..10			0..10
<a href="#">2.2065 RBC</a>	0..1	0..1			0..1
<a href="#">2.2067 RBDI</a>	0..1	0..1			0..1
<a href="#">2.2068 DTR</a>					

**Table D-1 Summary Field Lists for Identification and Verification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	NFUJ	NNDR	RPIS	RPISR	SRE
<a href="#">2.2069 RBTED</a>					
<a href="#">2.2070 RBATN</a>	0..1	0..1			0..1
<a href="#">2.2071 RBST</a>	0..1	0..1			0..1
<a href="#">2.2100 SED</a>					
<a href="#">2.2101 SST</a>					
<a href="#">2.2103 RSC</a>					

Note:

- Blank cells indicate the element is not used
- If one number then Min and Max of range is the same.

## APPENDIX D - REFERENCE NOTES

1. For this transaction, this field must contain a “Y.”
2. The DOO portion of this field is optional, but should be provided if known. ASL is required when the submission contains a RET = Y.
3. This field is mandatory for applicant submissions from DIS and OPM.
4. It is obviously not expected that full Name and Date of Birth of Unknown Deceased and Amnesia victims will be known. These fields, however, must be submitted with formatted information.
5. FBI number must be present if known for inquiry prints.
6. Field is mandatory if fingerprint submission is from an NFF State.
7. This field is mandatory if any finger is either amputated or a rolled impression was not made.
8. An UCN may be returned depending upon transaction results. No FBI number is returned when none is assigned (e.g., Non-Identification with RET = “N”). UCN will be returned for any submission resulting in an Identification against the Criminal File or when a Non-Identification results in an add to the Criminal File or Civil file.
9. CSL must be included where submission includes SLE.
10. This field will be returned in the response if subject identification is made.
11. Field is optional unless Identification has been made and subject criminal history was requested in submission.

# APPENDIX E: SUMMARY LOGICAL RECORD LAYOUTS FOR TYPE-2 INVESTIGATION, INFORMATION, AND NOTIFICATION TRANSACTIONS

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## 1.0 Introduction

Appendix E presents the summary logical record layouts for all Investigation, Information, and Notification transactions which are currently active. Table E-1 is the summarized representation of all currently active Investigation and Information transactions. As the 'Future Capability' transactions are developed they will be added to Table E-1. For detailed specifications of individual fields of these record sets, see Appendix C.

## 2.0 Interpretation of the Table

The column headers at the top of the page select a particular transaction. The row headers in the left margin give the tag number and ID for each field. The cell at the intersection of any given row and column gives the cardinality for the use of that field (row) in that transaction (column). If that cell is blank, the field is not used in that record. In all cases, the minimum number of occurrences for a mandatory field is one, and zero for an optional field. Finally, the superscript in the upper left-hand corner of the cell is a reference to any note pertaining to the use of that field in the record.

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	BATQ	BATR	CPR	EHRP	EQER	EQHR	EQRR	ERRI	ERRL	ERRR
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>									0..1	
<a href="#">2.005 RET</a>										
<a href="#">2.006 ATN</a>	0..1	0..1	0..1					0..1	0..1	
<a href="#">2.007 SCO</a>	0..9	0..9	0..9					0..9	0..9	
<a href="#">2.009 OCA</a>										
<a href="#">2.010 CIN</a>									0..5	
<a href="#">2.011 CIX</a>									0..5	
<a href="#">2.012 LCN</a>										
<a href="#">2.013 LCX</a>										
<a href="#">2.014 FBI</a>	1	1	1	0..1		0..1	0..20	0..1		0..1
<a href="#">2.015 SID</a>								0..1		
<a href="#">2.016 SOC</a>						0..1				
<a href="#">2.017 MNU</a>						0..4			0..4	
<a href="#">2.018 NAM</a>						0..1	0..1			
<a href="#">2.019 AKA</a>						0..10				
<a href="#">2.020 POB</a>						0..1				
<a href="#">2.021 CTZ</a>						0..1				
<a href="#">2.022 DOB</a>						1	1			
<a href="#">2.023 AGR</a>										
<a href="#">2.024 SEX</a>						1	1			
<a href="#">2.025 RAC</a>						1	1			
<a href="#">2.026 SMT</a>						0..10				
<a href="#">2.027 HGT</a>						0..1				
<a href="#">2.028 HTR</a>										
<a href="#">2.029 WGT</a>						0..1				
<a href="#">2.030 WTR</a>										
<a href="#">2.031 EYE</a>						0..1				
<a href="#">2.032 HAI</a>						0..1				
<a href="#">2.033 FPC</a>										
<a href="#">2.034 PAT</a>										
<a href="#">2.035 PPA</a>										
<a href="#">2.036 PHT</a>										
<a href="#">2.037 RFP</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	BATQ	BATR	CPR	EHRR	EQER	EQHR	EQRR	ERRI	ERRL	ERRR
<a href="#">2.038 DPR</a>										
<a href="#">2.039 EAD</a>										
<a href="#">2.040 OCP</a>										
<a href="#">2.041 RES</a>										
<a href="#">2.042 MIL</a>						0..1				
<a href="#">2.043 TSR</a>										
<a href="#">2.044 GEO</a>										
<a href="#">2.045 DOA</a>			0..1							
<a href="#">2.047 ASL</a>										
<a href="#">2.049 EID</a>										
<a href="#">2.051 CSL</a>										
<a href="#">2.053 OFC</a>										
<a href="#">2.054 SSD</a>										
<a href="#">2.055 SLE</a>										
<a href="#">2.056 ICO</a>										
<a href="#">2.057 FNR</a>										
<a href="#">2.059 SRF</a>										
<a href="#">2.060 MSG</a>		0..1			1..11			1..11	1..11	1..11
<a href="#">2.061 CST</a>									0..1	
<a href="#">2.062 IMT</a>	0..10									
<a href="#">2.064 CAN</a>										
<a href="#">2.065 RSR</a>										
<a href="#">2.067 IMA</a>										
<a href="#">2.070 RAP</a>						1				
<a href="#">2.071 ACN</a>										
<a href="#">2.072 FIU</a>										
<a href="#">2.073 CRI</a>	0..3	0..3	0..3	0..1	0..1	0..1	0..1	0..3	0..3	0..1
<a href="#">2.074 FGP</a>										
<a href="#">2.075 ERS</a>				1						
<a href="#">2.076 PRI</a>										
<a href="#">2.078 PEN</a>										
<a href="#">2.079 NCR</a>							1			
<a href="#">2.080 EXP</a>										
<a href="#">2.082 REC</a>										
<a href="#">2.083 ULF</a>										



**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	BATQ	BATR	CPR	EHRR	EQER	EQHR	EQRR	ERRI	ERRL	ERRR
<a href="#">2.084 AMP</a>										
<a href="#">2.085 CRN</a>										
<a href="#">2.086 SCNA</a>										
<a href="#">2.087 TAA</a>										
<a href="#">2.088 NOT</a>										
<a href="#">2.089 MSC</a>										
<a href="#">2.091 RCD1</a>										
<a href="#">2.092 RCD2</a>										
<a href="#">2.094 CCN</a>										
<a href="#">2.095 RFR</a>										
<a href="#">2.096 RPR</a>										
<a href="#">2.098 NDR</a>										
<a href="#">2.099 SAN</a>										
<a href="#">2.2001 NAM1</a>										
<a href="#">2.2002 NAM2</a>										
<a href="#">2.2003 NAM3</a>										
<a href="#">2.2004 NAM4</a>										
<a href="#">2.2005 NAM5</a>										
<a href="#">2.2006 CSF</a>										
<a href="#">2.2007 SDOB</a>										
<a href="#">2.2008 SNAM</a>										
<a href="#">2.2009 POC</a>										
<a href="#">2.2009 PTY</a>										
<a href="#">2.2010 NIR</a>										
<a href="#">2.2011 *tbd</a>										
<a href="#">2.2012 IIR</a>										
<a href="#">2.2014 *tbd</a>										
<a href="#">2.2015 RBXD</a>										
<a href="#">2.2016 DNAF</a>										
<a href="#">2.2017 DORI</a>										
<a href="#">2.2018 DNAC</a>										
<a href="#">2.2019 SEAL</a>										
<a href="#">2.2020 RBR</a>										
<a href="#">2.2021 IFS</a>										
<a href="#">2.2022 CIDN</a>				0..1	0..1	0..1	0..1			0..1

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	BATQ	BATR	CPR	EHRR	EQER	EQHR	EQRR	ERRI	ERRL	ERRR
<a href="#">2.2023 SII</a>										
<a href="#">2.2024 HTI</a>										
<a href="#">2.2025 GEO_TIME</a>										
<a href="#">2.2026 GEO_CORD</a>										
<a href="#">2.2027 DATUM_ID</a>										
<a href="#">2.2028 BID</a>										
<a href="#">2.2029 BSI</a>	0..1		0..1							
<a href="#">2.2030 PPD</a>										
<a href="#">2.2031 BIA</a>										
<a href="#">2.2032 ATR</a>		0..100								
<a href="#">2.2033 CNL</a>										
<a href="#">2.2034 ULR</a>										
<a href="#">2.2035 EVI</a>			0..1							
<a href="#">2.2036 POS</a>										
<a href="#">2.2037 ESI</a>										
<a href="#">2.2038 XRS</a>										
<a href="#">2.2039 RBMI</a>										
<a href="#">2.2040 RBT</a>										
<a href="#">2.2041 RBNI</a>										
<a href="#">2.2042 IAQ</a>										
<a href="#">2.2043 ITVFI</a>										
<a href="#">2.2044 RISCF</a>										
<a href="#">2.2045 FSI</a>										
<a href="#">2.2046 TLI</a>										
<a href="#">2.2047 RAR</a>										
<a href="#">2.2048 RBSI</a>										
<a href="#">2.2049 RBTB</a>										
<a href="#">2.2050 RBSL</a>										
<a href="#">2.2051 HNOTI</a>										
<a href="#">2.2052 MAI</a>										
<a href="#">2.2053 DSPSET</a>										
<a href="#">2.2054 RBSD</a>										
<a href="#">2.2055 SMS</a>										
<a href="#">2.2058 SMD</a>										
<a href="#">2.2059 TCL</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	BATQ	BATR	CPR	EHRR	EQER	EQHR	EQRR	ERRI	ERRL	ERRR
<a href="#">2.2060 IVFI</a>										
<a href="#">2.2061 BIE</a>										
<a href="#">2.2062 RBNF</a>										
<a href="#">2.2064 RBUD</a>										
<a href="#">2.2065 RBC</a>										
<a href="#">2.2067 RBDI</a>										
<a href="#">2.2068 DTR</a>										
<a href="#">2.2069 RBTED</a>										
<a href="#">2.2070 RBATN</a>										
<a href="#">2.2071 RBST</a>										
<a href="#">2.2073 BIL</a>										
<a href="#">2.2100 SED</a>										
<a href="#">2.2101 SST</a>										
<a href="#">2.2103 RSC</a>										

Note:

- If one number then Min and Max of range is the same.
- Blank cells indicate the element is not used

<sup>1</sup> If known, mandatory to enter.

<sup>2</sup> The number of candidates returned may be less than the maximum specified as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches.

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FRS	IRQ	IRR	ISR	LFFS	LFIS	LPNQ	LPNR	LRSQ	LRSR
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>										
<a href="#">2.005 RET</a>										
<a href="#">2.006 ATN</a>	0..1	1	1	1	1	1	0..1	0..1	1	1
<a href="#">2.007 SCO</a>	0..9	0..9	0..9	0..9	0..9	0..9				
<a href="#">2.009 OCA</a>										
<a href="#">2.010 CIN</a>	1				1	1	1	1		
<a href="#">2.011 CIX</a>	1				1	1	1	1		
<a href="#">2.012 LCN</a>										
<a href="#">2.013 LCX</a>										
<a href="#">2.014 FBI</a>		0..1000	1	0..1000						
<a href="#">2.015 SID</a>			0..1	0..1000						
<a href="#">2.016 SOC</a>										
<a href="#">2.017 MNU</a>										
<a href="#">2.018 NAM</a>			0..1							
<a href="#">2.019 AKA</a>										
<a href="#">2.020 POB</a>	0..1				0..1	0..1	0..1			
<a href="#">2.021 CTZ</a>	0..1									
<a href="#">2.022 DOB</a>	0..1									
<a href="#">2.023 AGR</a>	0..1				0..1	0..1	0..1			
<a href="#">2.024 SEX</a>	0..1				0..1	0..1	0..1			
<a href="#">2.025 RAC</a>	0..1				0..1	0..1	0..1			
<a href="#">2.026 SMT</a>	0..10				0..10	0..10	0..10			
<a href="#">2.027 HGT</a>										
<a href="#">2.028 HTR</a>	0..1				0..1	0..1	0..1			
<a href="#">2.029 WGT</a>										
<a href="#">2.030 WTR</a>	0..1				0..1	0..1	0..1			
<a href="#">2.031 EYE</a>	0..1				0..1	0..1	0..1			
<a href="#">2.032 HAI</a>	0..1				0..1	0..1	0..1			
<a href="#">2.033 FPC</a>										
<a href="#">2.034 PAT</a>					0..10	0..10	0..10			
<a href="#">2.035 PPA</a>			0..1							
<a href="#">2.036 PHT</a>			0..1							
<a href="#">2.037 RFP</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FRS	IRQ	IRR	ISR	LFFS	LFIS	LPNQ	LPNR	LRSQ	LRSR
<a href="#">2.038 DPR</a>										
<a href="#">2.039 EAD</a>										
<a href="#">2.040 OCP</a>										
<a href="#">2.041 RES</a>										
<a href="#">2.042 MIL</a>										
<a href="#">2.043 TSR</a>										
<a href="#">2.044 GEO</a>	0..5				0..5	0..5	0..5			
<a href="#">2.045 DOA</a>										
<a href="#">2.047 ASL</a>										
<a href="#">2.049 EID</a>										
<a href="#">2.051 CSL</a>										
<a href="#">2.053 OFC</a>										
<a href="#">2.054 SSD</a>										
<a href="#">2.055 SLE</a>										
<a href="#">2.056 ICO</a>										
<a href="#">2.057 FNR</a>		0..13								
<a href="#">2.059 SRF</a>										
<a href="#">2.060 MSG</a>										
<a href="#">2.061 CST</a>										
<a href="#">2.062 IMT</a>			0..1	0..1000						
<a href="#">2.064 CAN</a>										
<a href="#">2.065 RSR</a>										1
<a href="#">2.067 IMA</a>						0..1				
<a href="#">2.070 RAP</a>										
<a href="#">2.071 ACN</a>										
<a href="#">2.072 FIU</a>										
<a href="#">2.073 CRI</a>	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3
<a href="#">2.074 FGP</a>					0..10	0..10	0..10			
<a href="#">2.075 ERS</a>										
<a href="#">2.076 PRI</a>					1	1				
<a href="#">2.078 PEN</a>								1		
<a href="#">2.079 NCR</a>	0..1				0..1	0..1				
<a href="#">2.080 EXP</a>										
<a href="#">2.082 REC</a>										
<a href="#">2.083 ULF</a>	1				0..1	0..1				

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FRS	IRQ	IRR	ISR	LFFS	LFIS	LPNQ	LPNR	LRSQ	LRSR
<a href="#">2.084 AMP</a>			0..13							
<a href="#">2.085 CRN</a>										
<a href="#">2.086 SCNA</a>										
<a href="#">2.087 TAA</a>										
<a href="#">2.088 NOT</a>										
<a href="#">2.089 MSC</a>										
<a href="#">2.091 RCD1</a>					0..10	0..10	0..10			
<a href="#">2.092 RCD2</a>					0..10	0..10	0..10			
<a href="#">2.094 CCN</a>										
<a href="#">2.095 RFR</a>		0..1			0..1	0..1				
<a href="#">2.096 RPR</a>										
<a href="#">2.098 NDR</a>	0..10				0..10	0..10	0..10	0..10		
<a href="#">2.099 SAN</a>										
<a href="#">2.2001 NAM1</a>										
<a href="#">2.2002 NAM2</a>										
<a href="#">2.2003 NAM3</a>										
<a href="#">2.2004 NAM4</a>										
<a href="#">2.2005 NAM5</a>										
<a href="#">2.2006 CSF</a>										
<a href="#">2.2007 SDOB</a>										
<a href="#">2.2008 SNAM</a>										
<a href="#">2.2009 POC</a>										
<a href="#">2.2009 PTY</a>										
<a href="#">2.2010 NIR</a>	0..1				0..1	0..1				
<a href="#">2.2011 *tbd</a>										
<a href="#">2.2012 IIR</a>		0..1								
<a href="#">2.2014 *tbd</a>										
<a href="#">2.2015 RBXD</a>										
<a href="#">2.2016 DNAF</a>										
<a href="#">2.2017 DORI</a>										
<a href="#">2.2018 DNAC</a>										
<a href="#">2.2019 SEAL</a>										
<a href="#">2.2020 RBR</a>										
<a href="#">2.2021 IFS</a>										
<a href="#">2.2022 CIDN</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FRS	IRQ	IRR	ISR	LFFS	LFIS	LPNQ	LPNR	LRSQ	LRSR
<a href="#">2.2023 SII</a>										
<a href="#">2.2024 HTI</a>										
<a href="#">2.2025 GEO_TIME</a>										
<a href="#">2.2026 GEO_CORD</a>										
<a href="#">2.2027 DATUM_ID</a>										
<a href="#">2.2028 BID</a>		0..1000								
<a href="#">2.2029 BSI</a>			0..1	0..1000						
<a href="#">2.2030 PPD</a>					0..10	0..10	0..10			
<a href="#">2.2031 BIA</a>			0..1							
<a href="#">2.2032 ATR</a>										
<a href="#">2.2033 CNL</a>										
<a href="#">2.2034 ULR</a>										
<a href="#">2.2035 EVI</a>										
<a href="#">2.2036 POS</a>										
<a href="#">2.2037 ESI</a>										
<a href="#">2.2038 XRS</a>										
<a href="#">2.2039 RBMI</a>										
<a href="#">2.2040 RBT</a>										
<a href="#">2.2041 RBNI</a>										
<a href="#">2.2042 IAQ</a>										
<a href="#">2.2043 ITVFI</a>										
<a href="#">2.2044 RISCF</a>										
<a href="#">2.2045 FSI</a>										
<a href="#">2.2046 TLI</a>										
<a href="#">2.2047 RAR</a>										
<a href="#">2.2048 RBSI</a>										
<a href="#">2.2049 RBTD</a>										
<a href="#">2.2050 RBSL</a>										
<a href="#">2.2051 HNOTI</a>										
<a href="#">2.2052 MAI</a>										
<a href="#">2.2053 DSPSET</a>										
<a href="#">2.2054 RBSD</a>										
<a href="#">2.2055 SMS</a>										
<a href="#">2.2058 SMD</a>										
<a href="#">2.2059 TCL</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	FRS	IRQ	IRR	ISR	LFFS	LFIS	LPNQ	LPNR	LRSQ	LRSR
<a href="#">2.2060 IVFI</a>										
<a href="#">2.2061 BIE</a>										
<a href="#">2.2062 RBNF</a>										
<a href="#">2.2064 RBUD</a>										
<a href="#">2.2065 RBC</a>										
<a href="#">2.2067 RBDI</a>										
<a href="#">2.2068 DTR</a>										
<a href="#">2.2069 RBTED</a>										
<a href="#">2.2070 RBATN</a>										
<a href="#">2.2071 RBST</a>										
<a href="#">2.2073 BIL</a>										
<a href="#">2.2100 SED</a>										
<a href="#">2.2101 SST</a>										
<a href="#">2.2103 RSC</a>										

Note:

- If one number then Min and Max of range is the same.
- Blank cells indicate the element is not used

<sup>1</sup> If known, mandatory to enter.

<sup>2</sup> The number of candidates returned may be less than the maximum specified as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches.



**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	PRR	RBN	RBRN	RBIHS	RBIHSR	RBRPT	RBRPTR	SRB	SRL	SRT
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>										
<a href="#">2.005 RET</a>										
<a href="#">2.006 ATN</a>	0..1		0..1	0..1	0..1	0..1	0..1	0..1	1	0..1
<a href="#">2.007 SCO</a>	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9	0..9
<a href="#">2.009 OCA</a>										0..1
<a href="#">2.010 CIN</a>								1	1	
<a href="#">2.011 CIX</a>								1	1	
<a href="#">2.012 LCN</a>										
<a href="#">2.013 LCX</a>										
<a href="#">2.014 FBI</a>	0..1	1	1	1	1			0..1	0..1	
<a href="#">2.015 SID</a>										
<a href="#">2.016 SOC</a>										
<a href="#">2.017 MNU</a>										
<a href="#">2.018 NAM</a>		1	1		1					
<a href="#">2.019 AKA</a>										
<a href="#">2.020 POB</a>										
<a href="#">2.021 CTZ</a>										
<a href="#">2.022 DOB</a>		1	1		1					
<a href="#">2.023 AGR</a>										
<a href="#">2.024 SEX</a>										
<a href="#">2.025 RAC</a>										
<a href="#">2.026 SMT</a>										
<a href="#">2.027 HGT</a>										
<a href="#">2.028 HTR</a>										
<a href="#">2.029 WGT</a>										
<a href="#">2.030 WTR</a>										
<a href="#">2.031 EYE</a>										
<a href="#">2.032 HAI</a>										
<a href="#">2.033 FPC</a>										
<a href="#">2.034 PAT</a>										
<a href="#">2.035 PPA</a>										
<a href="#">2.036 PHT</a>										
<a href="#">2.037 RFP</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	PRR	RBN	RBRN	RBIHS	RBIHSR	RBRPT	RBRPTR	SRB	SRL	SRT
<a href="#">2.038 DPR</a>										
<a href="#">2.039 EAD</a>										0..1
<a href="#">2.040 OCP</a>										0..1
<a href="#">2.041 RES</a>										0..1
<a href="#">2.042 MIL</a>										
<a href="#">2.043 TSR</a>										
<a href="#">2.044 GEO</a>										
<a href="#">2.045 DOA</a>	0..1									
<a href="#">2.047 ASL</a>										
<a href="#">2.049 EID</a>										
<a href="#">2.051 CSL</a>										
<a href="#">2.053 OFC</a>										
<a href="#">2.054 SSD</a>										
<a href="#">2.055 SLE</a>										
<a href="#">2.056 ICO</a>										
<a href="#">2.057 FNR</a>										
<a href="#">2.059 SRF</a>										
<a href="#">2.060 MSG</a>			1					0..1	1	0..1
<a href="#">2.061 CST</a>										
<a href="#">2.062 IMT</a>										
<a href="#">2.064 CAN</a>									0..99	0..25
<a href="#">2.065 RSR</a>										
<a href="#">2.067 IMA</a>										
<a href="#">2.070 RAP</a>										
<a href="#">2.071 ACN</a>										
<a href="#">2.072 FIU</a>										
<a href="#">2.073 CRI</a>	0..3	1..3	1..3	0..3	0..3	0..3	1..3	0..3	0..3	0..3
<a href="#">2.074 FGP</a>									0..99	
<a href="#">2.075 ERS</a>		1			1					
<a href="#">2.076 PRI</a>										
<a href="#">2.078 PEN</a>										
<a href="#">2.079 NCR</a>								1	1	
<a href="#">2.080 EXP</a>	0..1									
<a href="#">2.082 REC</a>	1									
<a href="#">2.083 ULF</a>									0..1	

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	PRR	RBN	RBRN	RBIHS	RBIHSR	RBRPT	RBRPTR	SRB	SRL	SRT
<a href="#">2.084 AMP</a>										0..1
<a href="#">2.085 CRN</a>										
<a href="#">2.086 SCNA</a>									0..1	
<a href="#">2.087 TAA</a>										
<a href="#">2.088 NOT</a>								0..1		
<a href="#">2.089 MSC</a>									0..99	
<a href="#">2.091 RCD1</a>										
<a href="#">2.092 RCD2</a>										
<a href="#">2.094 CCN</a>										
<a href="#">2.095 RFR</a>										
<a href="#">2.096 RPR</a>										
<a href="#">2.098 NDR</a>										
<a href="#">2.099 SAN</a>										
<a href="#">2.2001 NAM1</a>										
<a href="#">2.2002 NAM2</a>										
<a href="#">2.2003 NAM3</a>										
<a href="#">2.2004 NAM4</a>										
<a href="#">2.2005 NAM5</a>										
<a href="#">2.2006 CSF</a>										
<a href="#">2.2007 SDOB</a>										
<a href="#">2.2008 SNAM</a>										
<a href="#">2.2009 POC</a>										
<a href="#">2.2009 PTY</a>										
<a href="#">2.2010 NIR</a>								1	0..1	
<a href="#">2.2011 *tbd</a>										
<a href="#">2.2012 IIR</a>										
<a href="#">2.2014 *tbd</a>										
<a href="#">2.2015 RBXD</a>		1	1							
<a href="#">2.2016 DNAF</a>										
<a href="#">2.2017 DORI</a>										
<a href="#">2.2018 DNAC</a>										
<a href="#">2.2019 SEAL</a>										
<a href="#">2.2020 RBR</a>							0..9			
<a href="#">2.2021 IFS</a>										
<a href="#">2.2022 CIDN</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	PRR	RBN	RBRN	RBIHS	RBIHSR	RBRPT	RBRPTR	SRB	SRL	SRT
<a href="#">2.2023 SII</a>										
<a href="#">2.2024 HTI</a>										
<a href="#">2.2025 GEO_TIME</a>										
<a href="#">2.2026 GEO_CORD</a>										
<a href="#">2.2027 DATUM_ID</a>										
<a href="#">2.2028 BID</a>										
<a href="#">2.2029 BSI</a>										
<a href="#">2.2030 PPD</a>										
<a href="#">2.2031 BIA</a>										
<a href="#">2.2032 ATR</a>										
<a href="#">2.2033 CNL</a>								0..99 <sup>z</sup>	0..297	
<a href="#">2.2034 ULR</a>								0..1		
<a href="#">2.2035 EVI</a>										
<a href="#">2.2036 POS</a>										
<a href="#">2.2037 ESI</a>										
<a href="#">2.2038 XRS</a>										
<a href="#">2.2039 RBMI</a>										
<a href="#">2.2040 RBT</a>										
<a href="#">2.2041 RBNI</a>		1		1..10	1..10					
<a href="#">2.2042 IAQ</a>										
<a href="#">2.2043 ITVFI</a>										
<a href="#">2.2044 RISCF</a>										
<a href="#">2.2045 FSI</a>										
<a href="#">2.2046 TLI</a>										
<a href="#">2.2047 RAR</a>						0..1				
<a href="#">2.2048 RBSI</a>		1	1	1	1	0..1				
<a href="#">2.2049 RBDT</a>		0..1	0..1							
<a href="#">2.2050 RBSL</a>							0..1			
<a href="#">2.2051 HNOTI</a>										
<a href="#">2.2052 MAI</a>										
<a href="#">2.2053 DSPSET</a>										
<a href="#">2.2054 RBSD</a>		1	1							
<a href="#">2.2055 SMS</a>										
<a href="#">2.2058 SMD</a>										
<a href="#">2.2059 TCL</a>										

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	PRR	RBN	RBRN	RBIHS	RBIHSR	RBRPT	RBRPTR	SRB	SRL	SRT
<a href="#">2.2060 IVFI</a>										
<a href="#">2.2061 BIE</a>										
<a href="#">2.2062 RBNF</a>										
<a href="#">2.2064 RBUD</a>		0..10	0..10		0..10					
<a href="#">2.2065 RBC</a>										
<a href="#">2.2067 RBDI</a>										
<a href="#">2.2068 DTR</a>						0..1				
<a href="#">2.2069 RBTED</a>		0..1			1..10					
<a href="#">2.2070 RBATN</a>		1	0..1							
<a href="#">2.2071 RBST</a>		0..1	0..1							
<a href="#">2.2073 BIL</a>								0..1000		
<a href="#">2.2100 SED</a>										
<a href="#">2.2101 SST</a>										
<a href="#">2.2103 RSC</a>										

Note:

- If one number then Min and Max of range is the same.
- Blank cells indicate the element is not used

<sup>1</sup> If known, mandatory to enter.

<sup>2</sup> The number of candidates returned may be less than the maximum specified as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches.

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	TPIS	TPRS	TPRR	TXTSRCH	UBM	UHN	ULM	UUBD	UULD
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>									
<a href="#">2.005 RET</a>									
<a href="#">2.006 ATN</a>	1	1	1	1	0..1	1	1	1	1
<a href="#">2.007 SCO</a>	0..9	0..9	0..9	0..9					
<a href="#">2.009 OCA</a>	0..1	0..1	0..1	0..1		0..1			
<a href="#">2.010 CIN</a>				0..1	1		1	1	1
<a href="#">2.011 CIX</a>				0..1	1		1	1	1
<a href="#">2.012 LCN</a>									
<a href="#">2.013 LCX</a>									
<a href="#">2.014 FBI</a>					1	0..1	0..1	1	0..1
<a href="#">2.015 SID</a>									
<a href="#">2.016 SOC</a>									
<a href="#">2.017 MNU</a>									
<a href="#">2.018 NAM</a>					0..1		0..1		
<a href="#">2.019 AKA</a>					0..10		0..10		
<a href="#">2.020 POB</a>				0..1	0..1		0..1		
<a href="#">2.021 CTZ</a>				0..1	0..1		0..1		
<a href="#">2.022 DOB</a>				0..5	0..5		0..5		
<a href="#">2.023 AGR</a>				0..1					
<a href="#">2.024 SEX</a>				0..1	0..1		0..1		
<a href="#">2.025 RAC</a>				0..1	0..1		0..1		
<a href="#">2.026 SMT</a>				0..10	0..10		0..10		
<a href="#">2.027 HGT</a>					0..1		0..1		
<a href="#">2.028 HTR</a>				0..1					
<a href="#">2.029 WGT</a>					0..1		0..1		
<a href="#">2.030 WTR</a>				0..1					
<a href="#">2.031 EYE</a>				0..1	0..1		0..1		
<a href="#">2.032 HAI</a>				0..1	0..1		0..1		
<a href="#">2.033 FPC</a>									
<a href="#">2.034 PAT</a>									
<a href="#">2.035 PPA</a>							0..1		
<a href="#">2.036 PHT</a>							0..1		
<a href="#">2.037 RFP</a>									1

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	TPIS	TPRS	TPRR	TXTSRCH	UBM	UHN	ULM	UUBD	UULD
<a href="#">2.038 DPR</a>						0..1	0..1		
<a href="#">2.039 EAD</a>	0..1	0..1	0..1						
<a href="#">2.040 OCP</a>	0..1	0..1	0..1						
<a href="#">2.041 RES</a>	0..1	0..1	0..1						
<a href="#">2.042 MIL</a>									
<a href="#">2.043 TSR</a>									
<a href="#">2.044 GEO</a>				0..5					
<a href="#">2.045 DOA</a>									
<a href="#">2.047 ASL</a>									
<a href="#">2.049 EID</a>				0..1					
<a href="#">2.051 CSL</a>									
<a href="#">2.053 OFC</a>									
<a href="#">2.054 SSD</a>									
<a href="#">2.055 SLE</a>									
<a href="#">2.056 ICO</a>									
<a href="#">2.057 FNR</a>									
<a href="#">2.059 SRF</a>						0..1			
<a href="#">2.060 MSG</a>					0..1		0..1	1..11	1..11
<a href="#">2.061 CST</a>									
<a href="#">2.062 IMT</a>				0..1	0..1		0..1		
<a href="#">2.064 CAN</a>									
<a href="#">2.065 RSR</a>									
<a href="#">2.067 IMA</a>									
<a href="#">2.070 RAP</a>		1							
<a href="#">2.071 ACN</a>									
<a href="#">2.072 FIU</a>									
<a href="#">2.073 CRI</a>	0..3	0..3	0..3	0..3	0..3	0..1	0..3	0..3	0..3
<a href="#">2.074 FGP</a>							1..10		1..10
<a href="#">2.075 ERS</a>			0..1						
<a href="#">2.076 PRI</a>									
<a href="#">2.078 PEN</a>									
<a href="#">2.079 NCR</a>	0..1	0..1		0..1					
<a href="#">2.080 EXP</a>									
<a href="#">2.082 REC</a>									
<a href="#">2.083 ULF</a>									

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	TPIS	TPRS	TPRR	TXTSRCH	UBM	UHN	ULM	UUBD	UULD
<a href="#">2.084 AMP</a>	0..10	0..10							
<a href="#">2.085 CRN</a>									
<a href="#">2.086 SCNA</a>					1		1		1
<a href="#">2.087 TAA</a>									
<a href="#">2.088 NOT</a>						0..1			
<a href="#">2.089 MSC</a>									
<a href="#">2.091 RCD1</a>									
<a href="#">2.092 RCD2</a>									
<a href="#">2.094 CCN</a>									
<a href="#">2.095 RFR</a>									1
<a href="#">2.096 RPR</a>									
<a href="#">2.098 NDR</a>	0..1								
<a href="#">2.099 SAN</a>									1..10
<a href="#">2.2001 NAM1</a>									
<a href="#">2.2002 NAM2</a>									
<a href="#">2.2003 NAM3</a>									
<a href="#">2.2004 NAM4</a>									
<a href="#">2.2005 NAM5</a>									
<a href="#">2.2006 CSF</a>									
<a href="#">2.2007 SDOB</a>									
<a href="#">2.2008 SNAM</a>									
<a href="#">2.2009 POC</a>									
<a href="#">2.2009 PTY</a>									
<a href="#">2.2010 NIR</a>				0..1					
<a href="#">2.2011 *tbd</a>									
<a href="#">2.2012 IIR</a>									
<a href="#">2.2014 *tbd</a>									
<a href="#">2.2015 RBXD</a>									
<a href="#">2.2016 DNAF</a>									
<a href="#">2.2017 DORI</a>									
<a href="#">2.2018 DNAC</a>									
<a href="#">2.2019 SEAL</a>									
<a href="#">2.2020 RBR</a>									
<a href="#">2.2021 IFS</a>									
<a href="#">2.2022 CIDN</a>									



**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	TPIS	TPRS	TPRR	TXTSRCH	UBM	UHN	ULM	UUBD	UULD
<a href="#">2.2023 SII</a>									
<a href="#">2.2024 HTI</a>						1			
<a href="#">2.2025 GEO_TIME</a>									
<a href="#">2.2026 GEO_CORD</a>									
<a href="#">2.2027 DATUM_ID</a>									
<a href="#">2.2028 BID</a>									
<a href="#">2.2029 BSI</a>					1		0..1		
<a href="#">2.2030 PPD</a>							0..10		
<a href="#">2.2031 BIA</a>					1		0..1		
<a href="#">2.2032 ATR</a>									
<a href="#">2.2033 CNL</a>									
<a href="#">2.2034 ULR</a>									
<a href="#">2.2035 EVI</a>									
<a href="#">2.2036 POS</a>				0..1	1				
<a href="#">2.2037 ESI</a>									
<a href="#">2.2038 XRS</a>									
<a href="#">2.2039 RBMI</a>									
<a href="#">2.2040 RBT</a>									
<a href="#">2.2041 RBNI</a>									
<a href="#">2.2042 IAQ</a>									
<a href="#">2.2043 ITVFI</a>									
<a href="#">2.2044 RISCFC</a>									
<a href="#">2.2045 FSI</a>									
<a href="#">2.2046 TLI</a>									
<a href="#">2.2047 RAR</a>									
<a href="#">2.2048 RBSI</a>									
<a href="#">2.2049 RBTD</a>									
<a href="#">2.2050 RBSL</a>									
<a href="#">2.2051 HNOTI</a>									
<a href="#">2.2052 MAI</a>									
<a href="#">2.2053 DSPSET</a>									
<a href="#">2.2054 RBSD</a>									
<a href="#">2.2055 SMS</a>				0..1					
<a href="#">2.2058 SMD</a>				0..1					
<a href="#">2.2059 TCL</a>				0..1					

**Table E-1 Summary Field Lists for Investigation, Information, and Notification Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Elem	TPIS	TPRS	TPRR	TXTSRCH	UBM	UHN	ULM	UUBD	UULD
<a href="#">2.2060 IVFI</a>									
<a href="#">2.2061 BIE</a>									
<a href="#">2.2062 RBNF</a>									
<a href="#">2.2064 RBUD</a>									
<a href="#">2.2065 RBC</a>									
<a href="#">2.2067 RBDI</a>									
<a href="#">2.2068 DTR</a>									
<a href="#">2.2069 RBTED</a>									
<a href="#">2.2070 RBATN</a>									
<a href="#">2.2071 RBST</a>									
<a href="#">2.2073 BIL</a>									
<a href="#">2.2100 SED</a>									
<a href="#">2.2101 SST</a>									
<a href="#">2.2103 RSC</a>									

Note:

- If one number then Min and Max of range is the same.
- Blank cells indicate the element is not used

<sup>1</sup> If known, mandatory to enter.

<sup>2</sup> The number of candidates returned may be less than the maximum specified as a result of thresholds determined by trade study tests and the algorithm used to determine potential matches.

# **APPENDIX F: FBI/CJIS IMAGE QUALITY SPECIFICATIONS**

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## **1.0 Scope and Purpose**

These specifications apply to: (1) systems that scan and capture fingerprints<sup>7</sup> in digital, softcopy form, including hardcopy scanners such as tenprint card scanners, and live scan devices, altogether called “fingerprint scanners”; and (2) systems utilizing a printer to print digital fingerprint images to hardcopy called “fingerprint printers.” These specifications provide criteria for ensuring the image quality of fingerprint scanners and printers that input fingerprint images to, or generate fingerprint images from within, theNGI system.

Digital softcopy images obtained from fingerprint scanners must have sufficient quality to allow the following functions to be performed: (1) conclusive fingerprint comparisons (identification or non-identification decision), (2) fingerprint classification, (3) automatic feature detection, and (4) overall Automated Fingerprint Identification System (AFIS) search reliability. The fingerprint comparison process requires a high-fidelity image. Finer detail, such as pores and incipient ridges, are needed because they can play an important role in the comparison.

The fingerprint examiners in the FBI/CJIS environment will depend upon softcopy-displayed images of scanned fingerprints to make comparisons, but will also need to accept and utilize hardcopy images in certain instances. For example, some contributors may print cards from live scan or card scan systems for submission to the FBI/CJIS. These hardcopy prints will be obtained from printers that include printing algorithms optimized for fingerprints. The printer’s principal function is to produce life-size prints of digital fingerprints that have met FBI/CJIS format requirements and provide sufficient print quality to support fingerprint comparisons, i.e., support identification or non-identification decisions.

The image quality requirements covered in the following Section 2 for fingerprint scanners, Section 3 for fingerprint identification flats, Section 4 for fingerprint printers, Section 5 for mobile scanners, and Section 6 for fast-track requirements have associated test procedures that are described in detail in [Test Procedures].

These test procedures will be used by the FBI/CJIS principally for certification of fingerprint systems; they may also be used in acceptance testing and in performance capability demonstrations as an indication of capability to perform. Equipment shall be tested to meet the requirements in normal operating modes, e.g., scanners shall not be tested at slower-than-normal operating speeds in an attempt to meet geometric accuracy specifications. A vendor may recommend alternate testing methods if the test procedures given in this appendix are not applicable or cannot be applied to the particular system under test.

## **2.0 Fingerprint/Palm Print Scanner**

The fingerprint scanner must be capable of producing images that exhibit good geometric fidelity, sharpness, detail rendition, gray-level uniformity, and gray-scale dynamic range, with

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<sup>7</sup> The term “fingerprint” in this appendix may also include palmprint, whole hand print, or a print from other parts of the human body.

low noise characteristics. The images must be true representations of the input fingerprints without creating any significant artifacts, anomalies, false detail, or cosmetic image restoration effects.

The scanner's final output resolution in both sensor detector row and column directions shall be in the range:  $(R-0.01R)$  to  $(R+0.01R)$  and shall be gray-level quantized to eight bits per pixel (256 gray-levels). The magnitude of "R" is either 500 pixels per inch (ppi) or 1,000 ppi; a scanner may be certified at either one or both of these resolution levels. The scanner's true optical resolution shall be greater than or equal to R.

A scanner intended to scan standard 8.0 by 8.0 inch tenprint cards, e.g., applicant fingerprint card type FD-258 or FD-249, shall be capable of capturing an area of at least 5.0 by 8.0 inches, which captures all 14 printblocks, either each printblock as a separate image or all printblocks together as a single image. In terms of individual printblocks, Table F-1 gives the preferred capture sizes applicable to both card scan and live scan systems, with the exception that, when scanning fingerprint cards, the card form dimensions take precedence.

**Appendix Table F-1 Preferred Capture Sizes**

	Preferred Width (inches)	Preferred Height (inches)
roll finger	1.6*	1.5
plain thumb	1.0	2.0
plain 4-fingers (sequence check)	3.2	2.0
plain 4-fingers (identification flat)	3.2	3.0
full palm	5.5**	8.0
half palm	5.5**	5.5**
writer's palm	1.75	5.0

\* Live scanner must be capable of capturing at least 80% of full roll arc length, where full roll arc length is defined as arc length from nail edge to nail edge.

\*\* 5.0" impressions will be accepted, although not preferred

The practice of "stitching" together images that were not captured simultaneously is prohibited. Individual images with the proper position code should be transmitted by the contributor. For example, non-simultaneous plain image captures from the two individual thumbs should be submitted as two individual image records with position codes 11 and 12 instead of being submitted as a single image record with position code 15. In this example, submitting individual images for each thumb avoids the masking of sequence errors. Another example is the submission of full palm print images. If the upper and lower palms are captured separately, they should be submitted as individual images using position codes 25 and 26 for the right hand or position codes 27 and 28 for the left hand. Under no circumstances should upper and lower palm images be stitched together and submitted as full palm impressions (position code 21 or 23), as the geometric relationship between minutiae is altered within the stitched image, which affects matching accuracy.

## 2.1 Linearity

### *Requirement:*

When measuring a stepped series of uniform target reflectance patches (e.g., step tablet) that substantially cover the scanner's gray range, the average value of each patch shall be within 7.65 gray-levels of a linear, least squares regression line fitted between target reflectance patch values (independent variable) and scanner output gray-levels (dependent variable).

### *Background:*

All targets used in Image Quality Specifications (IQS) compliance verification are expected to be scanned with the scanner operating in a linear input/output mode. Linearity enables valid comparisons of test measurements with requirements, e.g., a system's spatial frequency response in terms of Modulation Transfer Function (MTF) is, strictly speaking, a linear systems concept. Linearity also facilitates comparisons between different scanners through the "common ground" concept. In atypical cases, a small amount of smooth, monotonic nonlinearity may be acceptable for the test target scans, i.e., when it is substantially impractical and unrepresentative of operational use, to force linearity on the scanner under test (e.g., some live scan devices). Linearity is not a requirement for the operational or test fingerprint scans, which allows for processing flexibility to overcome inadequate tonal characteristics of fingerprint samples.

## 2.2 Geometric Accuracy

### *Requirement (across-bar):*

When scanning a multiple, parallel bar target, in both vertical bar and horizontal bar orientations, the absolute value of the difference between the actual distance across parallel target bars and the corresponding distance measured in the image shall not exceed the following values for at least 99.0 percent of the tested cases in each printblock measurement area and in each of the two orthogonal directions.

For 500-ppi scanner:

$$D \leq 0.0007, \quad \text{for } 0.00 < X \leq 0.07$$

$$D \leq 0.01X, \quad \text{for } 0.07 \leq X \leq 1.50$$

for 1,000-ppi scanner:

$$D \leq 0.0005, \text{ for } 0.00 < X \leq 0.07$$

$$D \leq 0.0071X, \quad \text{for } 0.07 \leq X \leq 1.5$$

where:

$$D = |Y - X|$$

X = actual target distance

Y = measured image distance

D, X, Y are in inches.

*Requirement (along-bar):*

When scanning a multiple, parallel bar target, in both vertical bar and horizontal bar orientations, the maximum difference in the horizontal or vertical direction, respectively, between the locations of any two points within a 1.5-inch segment of a given bar image shall not exceed 0.016 inches for at least 99.0 percent of the tested cases in each printblock measurement area and in each of the two orthogonal directions.

*Background:*

In this Section 2.2, the phrase: multiple, parallel bar target refers to a Ronchi target, which consists of an equal-width bar and space square wave pattern at 1.0 cy/mm, with high contrast ratio and fine edge definition. This target is also used to verify compliance with the scanner resolution requirement given in Section 2.0 of this appendix.

Across-bar geometric accuracy is measured across the imaged Ronchi target bars that substantially cover the total image capture area. The 500-ppi requirement corresponds to a positional accuracy of  $\pm 1.0$  percent for distances between 0.07 and 1.5 inches and a constant  $\pm 0.0007$  inches (1/3 pixel) for distances less than or equal to 0.07 inches. The 1,000-ppi requirement corresponds to a positional accuracy of  $\pm 0.71$  percent for distances between 0.07 and 1.5 inches and a constant  $\pm 0.0005$  inches (1/2 pixel) for distances less than or equal to 0.07 inches.

This measurement procedure is also used to verify the ppi resolution requirement given in Section 2.0 of this appendix.

Along-bar geometric accuracy is measured along the length of an individual Ronchi target bar in the image. For a given horizontal bar, for example, the maximum difference between bar center locations (in vertical direction), determined from bar locations measured at multiple points along a 1.5" bar segment length, is compared to the maximum allowable difference requirement (analogously for vertical bar). This requirement is to ensure that pincushion or barrel distortion over the primary area of interest, i.e., a single fingerprint, is not too large.

## **2.3 Spatial Frequency Response**

*Requirements:*

The spatial frequency response shall be measured using a continuous tone sine wave target denoted as MTF measurement unless the scanner cannot obtain adequate tonal response from

this target, in which case a bi-tonal bar target shall be used to measure the spatial frequency response, denoted as Contrast Transfer Function (CTF) measurement. When measuring the sine wave MTF, it shall meet or exceed the minimum modulation values given in Table F-2 in both the detector row and detector column directions and over any region of the scanner's field of view. When measuring the bar CTF, it shall meet or exceed the minimum modulation values defined by equation 2-1 or equation 2-2 (whichever applies) in both the detector row and detector column directions and over any region of the scanner's field of view. CTF values computed from equations 2-1 and 2-2 for nominal test frequencies are given in Table F-3. None of the MTF or CTF modulation values measured at specification spatial frequencies shall exceed 1.05.

The output sine wave image or bar target image shall not exhibit any significant amount of aliasing.

**Appendix Table F-2 MTF Requirement Using Sine Wave Target**

Frequency (cy/mm)	Minimum Modulation for 500 ppi Scanner	Minimum Modulation for 1000 ppi Scanner	Maximum Modulation
1	0.905	0.925	1.05 at all frequencies
2	0.797	0.856	
3	0.694	0.791	
4	0.598	0.732	
5	0.513	0.677	
6	0.437	0.626	
7	0.371	0.579	
8	0.312	0.536	
9	0.255	0.495	
10	0.200	0.458	
12		0.392	
14		0.336	
16		0.287	
18		0.246	
20		0.210	

Note: Testing at 7 and 9 cy/mm is not a requirement if these frequency patterns are absent from the sine wave target.

**Appendix Table F-3 Requirement Using Bar Target (Nominal Test Frequencies)**

Frequency (cy/mm)	Minimum Modulation for 500 ppi Scanner	Minimum Modulation for 1000 ppi Scanner	Maximum Modulation
1.0	0.948	0.957	1.05 at all frequencies
2.0	0.869	0.904	
3.0	0.791	0.854	
4.0	0.713	0.805	
5.0	0.636	0.760	
6.0	0.559	0.716	
7.0	0.483	0.675	
8.0	0.408	0.636	
9.0	0.333	0.598	
10.0	0.259	0.563	
12.0		0.497	

Frequency (cy/mm)	Minimum Modulation for 500 ppi Scanner	Minimum Modulation for 1000 ppi Scanner	Maximum Modulation
14.0		0.437	
16.0		0.382	
18.0		0.332	
20.0		0.284	

Note: Testing at or near 7 and 9 cy/mm is a requirement when using a bar target.

It is not required that the bar target contain the exact frequencies listed in Table F-3; however, the target does need to cover the listed frequency range and contain bar patterns close to each of the listed frequencies. The following equations are used to obtain the specification CTF modulation values when using bar targets that contain frequencies not listed in Table F-3.

500-ppi scanner, for  $f = 1.0$  to  $10.0$  cy/mm:

$$\text{CTF} = 3.04105\text{E-}04 * f^2 - 7.99095\text{E-}02 * f + 1.02774 \text{ (eq.2 -1)}$$

1,000-ppi scanner, for  $f = 1.0$  to  $20.0$  cy/mm:

$$\text{CTF} = -1.85487\text{E-}05 * f^3 + 1.41666\text{E-}03 * f^2 - 5.73701\text{E-}02 * f + 1.01341 \text{ (eq.2 - 2)}$$

*Background:*

For MTF assessment, the single, representative sine wave modulation in each imaged sine wave frequency pattern is determined from the sample modulation values collected from within that pattern. The sample modulation values are computed from the maximum and minimum levels corresponding to the “peak” and adjacent “valley” in each sine wave period. For a sine wave image, these maximum and minimum levels represent the image gray-levels that have been locally averaged in a direction perpendicular to the sinusoidal variation and then mapped through a calibration curve into target reflectance space. Sample image modulation in target reflectance space is then defined as:

$$\text{modulation} = (\text{maximum} - \text{minimum}) / (\text{maximum} + \text{minimum})$$

The calibration curve is the curve of best fit between the image gray-levels of the density patches in the sine wave target and the corresponding target reflectance values. [It is assumed that sine wave target modulations and target density patch values are supplied by the target manufacturer.] The scanner MTF at each frequency is then defined as:

$$\text{MTF} = \text{peak image modulation} / \text{target modulation}$$

For CTF assessment, the modulations are determined directly in image space, normalized by the image modulation at zero frequency, instead of using a calibration curve. The scanner CTF at each frequency is then defined as:

$$\text{CTF} = \text{peak image modulation} / (\text{zero frequency image modulation})$$



The bar target must contain at least 10 parallel bars at each of the higher spatial frequencies (~50% Nyquist to Nyquist frequency), which helps to ensure capture of optimum scanner – target phasing and aids investigation of potential aliasing. The bar target must also contain a very low frequency component, i.e., a large square, bar, or series of bars whose effective frequency is less than 2.5 percent of the scanner’s final output resolution. This low frequency component is used in normalizing the CTF; it must have the same density (on the target) as the higher frequency target bars.

The upper limit of 1.05 modulation is to discourage image processing that produces excessive edge sharpening, which can add false detail to an image.

Aliasing on sine wave images or bar images may be investigated by quantitative analysis and from visual observation of the softcopy-displayed image.

## **2.4 Signal-to-Noise Ratio (SNR)**

### *Requirement:*

The white signal-to-noise ratio (SNR) and black signal-to-noise ratio shall each be greater than or equal to 125.0 in at least 97.0 percent of respective cases within each printblock measurement area.

### *Background:*

The signal is defined as the difference between the average output gray-levels obtained from scans of a uniform low reflectance and a uniform high reflectance target, measuring the average values over independent 0.25 by 0.25 inch areas within each printblock area. The noise is defined as the standard deviation of the gray-levels in each of these quarter-inch measurement areas. Therefore, for each high reflectance, low reflectance image pair there are two SNR values, one using the high reflectance standard deviation and one using the low reflectance standard deviation. To obtain a true measure of the standard deviation, the scanner is set up such that the white average gray-level is several gray-levels below the system’s highest obtainable gray-level and the black average gray-level is several gray-levels above the system’s lowest obtainable gray-level.

## **2.5 Gray-Level Uniformity**

### *Requirement – adjacent row, column uniformity:*

At least 99.0 percent of the average gray-levels between every two adjacent quarter-inch-long rows and 99.0 percent between every two adjacent quarter-inch-long columns within each imaged printblock area shall not differ by more than 1.0 gray-levels when scanning a uniform

low-reflectance target and shall not differ by more than 2.0 gray-levels when scanning a uniform high-reflectance target.

*Requirement – pixel-to-pixel uniformity:*

For at least 99.9 percent of all pixels within every independent 0.25 by 0.25 inch area located within each imaged printblock area, no individual pixel's gray-level shall vary from the average by more than 22.0 gray-levels when scanning a uniform high-reflectance target and shall not vary from the average by more than 8.0 gray-levels when scanning a uniform low-reflectance target.

*Requirement – small area uniformity:*

For every two independent 0.25 by 0.25 inch areas located within each imaged printblock area, the average gray-levels of the two areas shall not differ by more than 12.0 gray-levels when scanning a uniform high-reflectance target and shall not differ by more than 3.0 gray-levels when scanning a uniform low-reflectance target.

*Background:*

Measurements are made over multiple, independent test areas on a printblock-by-printblock basis. (For a live scanner, the entire capture area is normally considered a single printblock area). To obtain a true measure of the standard deviation, the scanner is set up such that the white average gray-level is several gray-levels below the system's highest obtainable gray-level and the black average gray-level is several gray-levels above the system's lowest obtainable gray-level.

## **2.6 Fingerprint Image Quality**

The scanner shall provide high quality fingerprint images; the quality will be assessed with respect to the following requirements.

*Requirement – Fingerprint Gray Range:*

At least 80.0 percent of the captured individual fingerprint images shall have a gray-scale dynamic range of at least 200 gray-levels, and at least 99.0 percent shall have a dynamic range of at least 128 gray-levels.

*Background:*

Card and live scan systems at a booking station have some control over dynamic range on a subject-by-subject or card-by-card basis, e.g., by rolling an inked finger properly or by adjusting gain on a livescanner. However, with central site or file conversion systems where a variety of card types and image qualities are encountered in rapid succession, automated adaptive processing may be necessary. The eight-bits-per-pixel quantization of the gray-scale values for

very low contrast fingerprints needs to more optimally represent the reduced gray-scale range of such fingerprints, but without significant saturation. The intent is to avoid excessively low contrast images without adding false detail.

Dynamic range is computed in terms of number of gray-levels present that have signal content, measuring within the fingerprint area and substantially excluding white background and card format lines, boxes, and text.

For card scanners, compliance with these dynamic range requirements will be verified using a statistically stratified sample set of fingerprint cards assembled by the FBI/CJIS. The test fingerprint card set may include cards with difficult-to-handle properties, e.g., tears, holes, staples, glued-on photos, or lamination, for testing card scanners that have automatic document feeder mechanisms. For live scanners, compliance will be verified with sets of livescans produced by the vendor.

*Requirement – Fingerprint Artifacts and Anomalies:*

Artifacts or anomalies detected on the fingerprint images that are due to the scanner or image processing shall not significantly adversely impact support to the functions of conclusive fingerprint comparisons (identification or non-identification decision), fingerprint classification, automatic feature detection, or overall Automated Fingerprint Identification System (AFIS) search reliability.

*Background:*

The fingerprint images will be examined to determine the presence of artifacts or anomalies that are due to the scanner or image processing; assessment may include measurements to quantify their degree of severity and significance. Image artifacts or anomalies such as the following non-inclusive list may be investigated.

- jitter noise effects
- sharp truncations in average gray-level between adjacent printblocks
- gaps in the gray-level histograms, i.e., zero pixels in intermediate gray-levels, or clipping to less than 256 possible gray-levels
- imaging detector butt joints
- noise streaks
- card bleed-through
- gray-level saturation

*Requirement – Fingerprint Sharpness and Detail Rendition:*

The sharpness and detail rendition of the fingerprint images, due to the scanner or image processing, shall be high enough to support the fingerprint functions stated in Section 1, paragraph 2.

*Background:*

Fingerprint sharpness and detail rendition that is due to the scanner or image processing may be investigated by employing suitable, objective image quality metrics, as well as by visual observation of the softcopy-displayed image.

### **3.0 Identification Flats**

Traditional fingerprint sets contain both rolled and plain fingerprint images. The rolled impressions support the search processing and identification functions and the plain impressions are used primarily for sequence verification. Fingerprinting systems designed for “Identification Flats” civilian background checks capture a single set of plain impressions. This single set of plain impressions must support finger sequence verification, search processing, and identification.

Image quality has historically been a challenge for civil background checks. Some programs require a large number of relatively low-volume capture sites, which makes training difficult. A key goal for identification flats scanners is to reduce the need for training so that inexperienced users consistently capture quality fingerprint images.

The identification flats scanner shall meet all of the requirements stated in Section 2 of this appendix as well as the following requirements.

#### *Requirement – Capture Protocol:*

The system shall provide a simple capture protocol.

#### *Background:*

A simple capture protocol supports the inexperienced user’s ability to more consistently capture high quality fingerprints. Identification flats collection systems will be evaluated for their ability to produce a very small rate of failure to enroll in an operational setting. Systems with a minimum capture area of 3.2 inches (width) by 3.0 inches (height) that can capture four fingers simultaneously in an upright position will be considered in compliance with the simple capture protocol requirement. Other capture approaches will require specific testing and documentation.

#### *Requirement – Verifiable Finger Sequence Data:*

The method of capturing the fingers shall result in very low probability of error in the finger numbers.

#### *Background:*

The fingerprinting system’s capture protocol will be evaluated for its ability to capture verifiable finger sequence data. Based on the Ohio WebCheck National trial systems with a minimum capture area of 3.2 inches (width) by 3.0 inches (height) that capture the left four fingers simultaneously, the right four fingers simultaneously and the two thumbs simultaneously (4-4-2)

in an upright position will be considered in compliance with the finger sequence requirements. Other capture approaches will require specific testing and documentation.

## 4.0 Fingerprint Printer

### *Requirement:*

The fingerprint printer, consisting of a printer and specialized print algorithm, must be capable of producing hardcopy images that exhibit good geometric fidelity, sharpness, detail rendition, gray-level uniformity, and gray-scale dynamic range characteristics, with low noise, no significant creation of false detail, and with the capability to support magnified viewing of the print without breakup of the virtual fingerprint image presented to the eye. This printer is expected to provide high throughput, good repeatability, good print permanency characteristics, and low cost per copy. A typical fingerprint printer is a gray-scale laser printer<sup>8</sup> with 1,200 black/white dots per inch resolution combined with a printing algorithm that typically includes image contrast and printer gamma/highlight/lowlight adjustments, image rescaling, and an error diffusion model with randomized dot dither printing applied to the rescaled image.

The print system's principal function is to produce life-size prints of digital fingerprints that have met FBI/CJIS format requirements as specified in EBTS and ANSI/NIST-ITL and to provide sufficient print quality to support fingerprint comparisons, i.e., support identification or non-identification decisions. The printer should also have the capability to print gray-scale mugshots and property/evidence photos (not necessarily using a fingerprint printing algorithm), as well as print black and white documents containing text and graphics, onto 8.5 x 11.0 inch paper.

A required printer resolution is 500 ppi, which produces the required life-size print when the input digital fingerprint is 500 ppi or when a 1,000-ppi digital fingerprint is down-scaled to 500 ppi prior to printing. In both cases, all other 500-ppi printer requirements must also be met.

### *Background:*

Verification of the specific performance requirements in Section 4 of this appendix is accomplished by evaluating the printer's output print of an FBI/CJIS-designated test set of digitized fingerprints and FBI/CJIS-designated digital test target. Requirements compliance verification is performed by a combination of visual assessments of the test prints (aided by visual instruments) and computer-aided assessments of scanned digital images of the test prints. With respect to those requirements that depend on assessments of print scans for compliance verification, the scan resolution is expected to be twice the required gray-scale print resolution, e.g., a print with 500-ppi resolution is scanned at 1,000 ppi, and the scanner is expected to be setup in a calibrated linear input/output, grayscale reflectance capture mode.

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<sup>8</sup> In this appendix, "laser printer" refers to a type of printer in which a laser beam "draws" an electrostatic image of an input signal onto a drum. Toner (typically dry powder) is then transferred to the charged areas of the drum, which then transfers the toner onto paper, where it is fused by heat, creating a black/white/gray image.

## **4.1 Spatial Frequency Response**

### *Requirement:*

The printer shall provide sufficient spatial frequency response to support visually resolving the required printer resolution in orthogonal directions on the print.

### *Background:*

Resolution verification is performed by printing high-contrast digital bar targets and visually inspecting the print under magnification. (When employing a laser printer with a fingerprint printing algorithm, it is recognized and accepted that the effective resolution may vary in complex image areas such as a fingerprint.)

The resolution limit is a single point on the spatial frequency response curve; the entire curve may be measured by scanning the print of an appropriate target, performing appropriate computer-aided assessment on the scan, and comparing results to a minimally acceptable spatial frequency response curve.

## **4.2 Gray-Levels**

### *Requirement:*

At least 16 gray-levels shall be visually distinguishable on the print.

### *Background:*

Visual observation of the print of a digital target containing a step tablet is used to verify the 16-gray-level requirement. A higher number of gray-levels is expected to be distinguishable by appropriate computer-aided assessment of the scanned image of the print.

## **4.3 Dynamic Range**

### *Requirement:*

The printer shall have the capability to print an input digital image gray range of at least 130, excluding print black saturation and print white saturation.

### *Background:*

The print of a digital step tablet is scanned, each pixel's output gray-level value is converted to the corresponding print reflectance value, and the average print reflectance value within each step is computed. A plot of step average print reflectance versus input digital step tablet gray-level must result in a gray range of at least 130, excluding any saturation on the low end (print black reflectance) and high end (print white reflectance). (The scanner output gray-level to print reflectance conversion is established by generating the scanner's input/output curve using a calibrated step tablet.)

#### 4.4 Geometric Accuracy and Print Scale

*Requirement (across-bar):*

When printing a digital bar target containing multiple, parallel bars, the absolute value of the difference between the measured distance across parallel bars on the print and the correct distance on the print shall not exceed the values given in Table F-4 for at least 97 percent of the tested "short distance" and "medium distance" cases in each direction (vertical and horizontal).

**Appendix Table F-4 Printer Geometric Accuracy Requirements**

Distance Error (D)	Distance Range (X)	Comment
$D \leq 0.001$	$0.00 < X \leq 0.07$	short distance
$D \leq 0.015X$	$0.07 < X \leq 1.50$	medium distance
$D \leq 0.010X$	$4.75 < X \leq 8.00$	long distance

Table Note:  $D = |Y - X|$

X = correct distance = digital target pixels / required print resolution

Y = measured distance on print

D, X, Y are in inches

The average of all "medium distance" test cases, in each direction, shall not exceed the corresponding values of D given in Table F-4.

The average of all "long distance" test cases, in each direction, shall not exceed the corresponding values of D given in Table F-4.

*Requirement (along-line):*

Straight target lines printed parallel to or at a 45-degree angle to the paper or card edges shall be straight on the print with no significant waviness, bow, or "staircasing."

*Background:*

The across-bar requirement corresponds to a positional accuracy of  $\pm 1.5$  percent for distances greater than 0.07 inches and less than or equal to 1.5 inches and a constant  $\pm 0.001$  inches for distances less than or equal to 0.07 inches. With a 500 ppi-required print resolution, a digital bar

target with a period of 18 pixels is used, which corresponds to a bar frequency of  $500 / (25.4 * 18)$  cy/mm on the print, when printed life-size. The measured distance on the print can be obtained by scanning the print and applying computer-assisted assessment on the resulting digital image. The requirement takes into account the geometric errors inherent in a good quality scanner. For life-size printing, the print scale error is measured over a distance in the 0.07 to 1.50 inch range. Print scale error is equal to:  $(\text{correct distance} - \text{measured distance}) / \text{correct distance}$ . For lifesize printing at 500 ppi, a 1.5 percent allowable error in distance, measured in inches, is equivalent to an allowable print ppi error equal to  $\pm 7.5$  ppi.

The along-line requirement can be assessed visually, aided, e.g., by a straight-edge and magnifying lens.

#### **4.5 Noise**

*Requirement:*

For a required printer resolution of 500 ppi, the noise magnitude shall be less than 0.120 at each average print reflectance level when noise magnitude is defined as the standard deviation of print reflectance values within an area on the print corresponding to a constant gray-level on the input digital target. (Print reflectance is measured in fractional units: 0.0 to 1.0 range.)

*Background:*

A digital step tablet is printed, the print is scanned at 1000 ppi, each pixel's output gray-level value is converted to the corresponding print reflectance value, and the standard deviation of print reflectance values within each step is computed. The scanner output gray-level to print reflectance conversion is established by generating the scanner's input/output curve using a calibrated step tablet.

#### **4.6 Print Polarity and Color**

*Requirement:*

The printed fingerprints shall appear as dark gray-to-black ridges on a light gray-to-white background.

#### **4.7 Print Permanence**

*Requirement:*

The printed fingerprints shall not smear or smudge with normal handling.



## **4.8 Print Stability**

### *Requirement:*

Both the fingerprints and the card stock or paper on which they are printed shall retain their visually neutral (black, white, gray) color over time.

## **4.9 Hazardous Materials**

### *Requirement:*

The prints shall not produce any health hazard as a result of handling. They shall not produce any noxious, annoying, or unpleasant odors when accumulated in large numbers and handled in areas having limited ventilation.

### *Background:*

Requirements 4.7 (print permanence), 4.8 (print stability), and 4.9 (hazardous materials) are met by standard laser printers.

## **4.10 Fingerprint Prints**

### **4.10.1 Print Types Requirements**

#### *Requirement:*

The printer shall have the capability to print a set of individual livescans or previously scanned, individual inked fingerprints, life-size and in their correct printblock locations, onto a standard tenprint fingerprint card (e.g., fingerprint card type FD-258), or print onto blank 8.0 by 8.0 inch card stock, or print onto blank 8.5 x 11.0 inch plain paper. In the case of printing fingerprints onto blank card stock or blank paper, the printer shall also print the printblock boundary lines and labeling that normally appears on a standard tenprint card.

The printer shall have the capability to print a previously scanned tenprint card in its entirety and life-size onto blank 8.0 x 8.0 inch card stock or onto blank 8.5 by 11.0 inch plain paper.

NOTE: Printer margins for any printblock when printed on 8.0 x 8.0 inch card stock may not exceed 10% of the image width dimensions. For an image 1.6 inches wide, this means a margin of 0.16 inches or less. In worst case, truncation of card edges is acceptable. Any shrinkage resulting in image reduction is unacceptable.

The printer shall have the capability to print a single fingerprint magnified up to five times beyond life-size onto 8.5 by 11.0 inch plain paper.

When printing in tenprint card format onto tenprint card stock, blank card stock, or plain paper, the printer shall also have the capability to print labels, bar chart, step tablet, and finger condition codes, all on the same print with the fingerprints. Figure F-1 illustrates the printing of this auxiliary information. Sections 4.10.2 through 4.10.5 of this appendix give the detailed requirements.

#### **4.10.2 Labels**

##### *Requirement:*

When printing fingerprints in tenprint card format, the printing process shall have the capability to print a character string of scanner information within the left four finger plain impression printblock and a character string of printer information within the right four finger plain impression printblock. Each character string shall be printed along the top inside edge of the respective printblock in a type font and size that is large enough for human readability without the aid of a magnifier and small enough so as not to unduly impinge on fingerprint structure.

The scanner information string shall include the scanner make, model number, and serial number, if available, and/or similar information on the scanner system. The printer information string shall include the printer make, model number, and serial number, if available, and shall include similar information on the fingerprint printing algorithm, if available, and shall include the date and time of printing.

The scanner and printer character strings shall be printed without a background, border, or any other type of added surround.

##### *Background:*

Information for the scanner string can typically be obtained from the EBTS Type-2 record field identified as “IMA 2.067 – Image Capture Equipment,” which includes scanner system make, model number, and serial number.

A printer is certified as a combination of a specific brand/model printer and fingerprint printing algorithm; the latter may also have a name or version designation.

Character string printing: a solid background (e.g., white) to the character string is unacceptable because it would unnecessarily obliterate some parts of fingerprints on some images. Individual characters with no background that overprint the fingerprint would obliterate a much smaller proportion of the fingerprint and are acceptable. Printing the character strings in an open space created by offsetting printblocks 6-10 from printblocks 11-14 is unacceptable because it changes the dimensions of the standard tenprint card format, and it cannot adequately accommodate fingerprints that stray across printblock boundaries.

Proper text size typically would correspond to a height of a numeral or upper case letter being in the range: 0.067 inches to 0.095 inches.

### 4.10.3 Bar Chart

*Requirement:*

When printing fingerprints in tenprint card format, the printing process shall have the capability to print a bar chart consisting of equally spaced horizontal black bars and vertical black bars printed at the required printer resolution.

The bar chart shall be positioned at the top edge within the right thumb plain impression printblock and shall have a maximum width of 0.8 inches and a maximum height of 0.125 inches. The bar chart shall contain at least 10 parallel bars in each direction, vertical and horizontal, with a bar length of at least 0.0625 inches (not necessarily the same number of bars, or same bar length, in the two directions).

An optional, uniform mid-grey-level patch may be included between the horizontal and vertical bar components.

The bar chart shall be printed without border or any other type of added surround.

*Background:*

For a 500-ppi printer requirement, the limiting frequency is 250 cycles per inch, which implies that 250 black bars per inch are printed, where the 0.002-inch width of an individual bar is equal to the width of the white space between two bars.

If a mid-gray patch between the vertical and horizontal bar patterns appears to have the same overall gray-level on the print as the two bar patterns, then this may indicate that the printer gamma/highlight/lowlight settings are optimum and/or that the printer toner supply was adequate for printing.

### 4.10.4 Step Tablet

*Requirement:*

When printing fingerprints in tenprint card format, the printing process shall have the capability to print a step tablet, consisting of two adjacent horizontal bands, each band having 16 gray-levels. The top band should progressively darken from left to right and the bottom band should progressively darken from right to left. The 16 digital input gray-levels corresponding to one band shall be identically the same as for the other band, and both bands shall substantially cover the total gray-level range. This step tablet shall be positioned at the top edge within the left thumb plain impression printblock and shall have a total width between 0.5 inches and 0.8 inches and a total height between 0.0625 inches and 0.125 inches.

The step tablet shall be printed without border or any other type of added surround.

*Background:*

If the top band and bottom band appear “balanced” on the print, i.e., the same mid-gray level appears in the middle of both the top and bottom bands, then this may indicate that the printer gamma/highlight/lowlight settings are optimum.

#### **4.10.5 Finger Condition Codes**

*Requirement:*

When printing fingerprints in tenprint card format, the printing process shall have the capability to notate the presence of an abnormal finger condition in the appropriate printed fingerprint block for those cases where the EBTS Type-2 record field identified as “AMP” (amputated or bandaged) is available and/or for those cases where similar information is available from other sources, such as a state system (possibly with other notation codes).

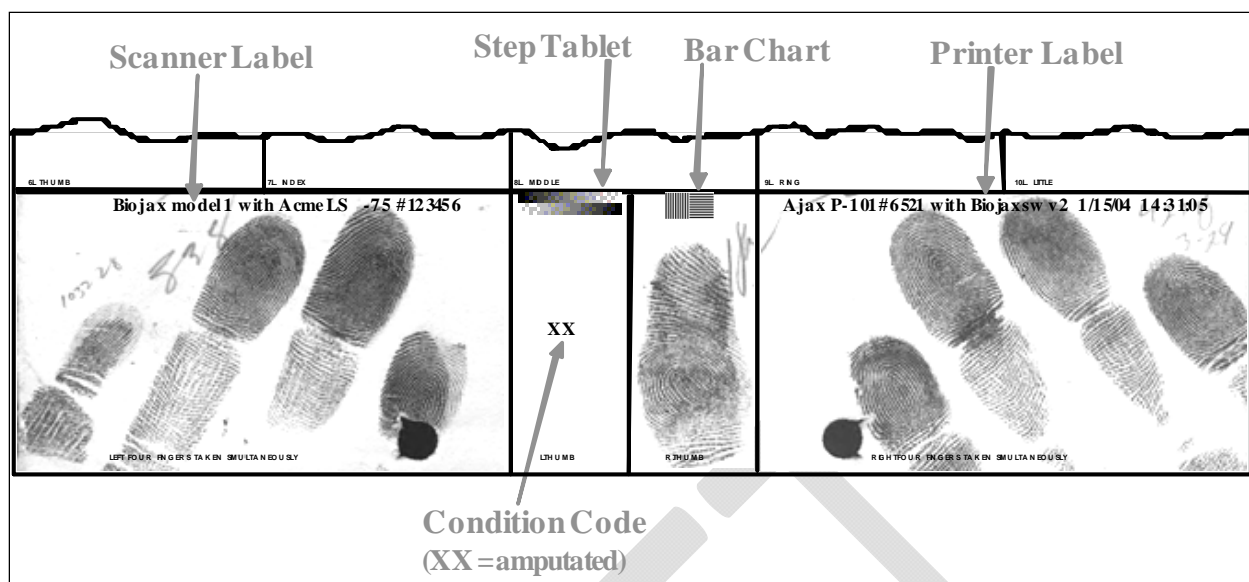
#### **4.10.6 Fingerprint Quality**

*Requirement:*

The printer shall produce sufficient print quality to allow usable viewing of life-size fingerprint prints under magnification to support fingerprint comparisons, i.e., identification or non-identification decisions. The print image shall maintain its sharpness and detail rendition structure up to at least 4X magnification to the extent that ridges and ridge joints, bifurcations, and terminations that exist in the input digital image to the printer can be substantially discerned by the human observer on the output print without being “lost in the noise.” In addition, the printing process shall not create significant false detail, e.g., it shall not create ridges where none existed in the input digital image.

*Background:*

Assessment of the requirement is performed by visual inspection of the print augmented by appropriate quantitative analysis of the scanned print.



Appendix Figure F-1 Auxiliary Information Printed in Tenprint Card Format Print

## 5.0 Mobile ID

A mobile identification device is a livescanner viewed in the context of a portable biometric acquisition station, i.e. one that is not intended to be stationary and hardwired to a much larger system used for comparing or matching biometric samples. Since mobile devices may satisfy a variety of collection modalities with differing image size and accuracy requirements, a set of Fingerprint Acquisition Profiles (FAP) for fingerprint images has been developed. Table F-5 summarizes the image sizes and IQS specification requirements relevant for each image interchange profile allowed by the FBI/CJIS for an RPIS transaction.

### *Requirement – Image Size/Impression Type:*

For a given FAP, the minimum image dimensions and full range of simultaneous number of fingers specified in Table F-5 shall be met. The device shall be able to collect flat impressions. Rolled acquisition is optional.

### *Requirement – Image Quality:*

As indicated in Table F-5, two IQS specification requirements are supported for mobile ID scanners. When the IQS specification requirement is PIV, then all requirements in Personal Identity Verification (PIV) Image Quality Specifications for Single Finger Capture Devices shall be met. When the IQS specification requirement is Appendix F, then all the requirements in Section 2 of this document shall be met.

### *Background:*

FAP 30 and lower are for single finger sensors and are primarily for identification/verification, while FAP 40 and above support simultaneous image capture which is faster, reduces sequence errors and produces higher quality images for both enrollment and identification searches. The FBI/CJIS recommends that acquisition devices meet a minimum of FAP 30 to allow the

following functions to be performed: (1) automatic feature detection; (2) fingerprint classification; (3) overall AFIS search reliability; and (4) conclusive fingerprint comparisons. Agencies submitting RPIS transactions should select a FAP level based on their specific requirements.

**Appendix Table F-5 Mobile ID IQS Requirements**

Fingerprint Acquisition Profile (FAP)	Minimum Image Dimensions (WxH in inches)	IQS Specification Requirements	Simultaneous # of Fingers
10	0.5 x 0.65	PIV	1
20	0.6 x 0.8	PIV	1
30	0.8 x 1.0	PIV	1
40	1.6 x 1.5	PIV	1-2
45	1.6 x 1.5	App F	1-2
50	2.5 x 1.5	App F	1-3
60	3.2 x 3.0	App F	1-4

NOTE: Although the RISC will accept submissions from Mobile Fingerprint Scanners that don't meet these requirements, the FBI/CJIS Division reserves the right to enforce these, or any other, scanner requirements deemed necessary to meet accuracy levels established by the FBI/CJIS Division's Advisory Policy Board. NGI RISC participants should refer to the FBI/CJIS Biometric Specification ([www.fbibiospecs.org](http://www.fbibiospecs.org)) IAFIS Certified Products List/Mobile ID Category for a list of mobile identification devices which have been certified by the FBI/CJIS as tested and in compliance with the FBI/CJIS's Next Generation Identification (NGI) initiatives and Integrated Automated Fingerprint Identification System (IAFIS) Image Quality Specifications (IQS). The certification process is not intended to endorse one product over a competitor's product but merely to certify that the product meets FBI/CJIS standards and that, between two products that meet FBI/CJIS standards, the FBI/CJIS does not recommend one over the other.

## 6.0 Fast-Track Certification

First, to review, full certification testing is required when:

- An uncertified livescan device is presented together with suitable SW such that the combination prospectively meets all IQS requirements.
- A hardcopy scanner or printer (typically a COTS product) is presented together with suitable SW such that the combination prospectively meets all IQS requirements. (The specific SW may be sold separately from the COTS HW, but only the specific HW/SW combination is certified.)
- Substantive modifications are made to an already-certified device. For example, the sensor or optics is changed, the capture area is expanded, the signal processing is substantively changed, or a 500 ppi-certified device is extended for operation at 1000 ppi.

Fast track certification testing is sufficient when:

- A vendor adds "value" to an already certified device by, for example, integrating additional SW and/or HW and repackaging the combination to create a Value-Added Reseller (VAR) label system. However, if there is a reasonable expectation that the added SW, HW, or repackaging will affect the image quality performance of the original certified device, then full certification testing would be required.

- A vendor makes relatively minor modifications to a previously certified device. For example, a membrane is added to (or deleted from) a certified livescanner, an automatic document feeder is added to a certified manual-feed cardscanner, or a 1000 ppi-certified scanner is operated at 500 ppi using the same optics, sensor, and illumination.

Table F-6 presents the test data requirements for some common fast track certification scenarios; for test requirements for other scenarios, contact the FBI/CJIS. In addition to the test data, the vendor seeking fast track certification must provide a written statement to the FBI/CJIS (letter or e-mail) affirming that the previously certified fingerprint device has not been changed with respect to device functions, hardware, firmware, or software that could reasonably be expected to affect image quality performance.<sup>9</sup> Specific to a scanner, the optics and optical layout, sensor, illumination, image capture electronics, and signal processing have not been changed and the maximum capture area has not been increased.

No certification testing is necessary when:

- The original recipient of a certification wishes to change the model name and there are no other changes to the certified product.
- The original recipient of a certification wishes to repackage the device if there is a reasonable expectation that the repackaging will not affect the image quality performance of the device. All device HW/SW components that may affect image quality performance must remain the same as they were when originally certified. For example, repackaging a device into a ruggedized cabinet or repackaging a floor-standing device as a desktop device by separating out the host computer would not necessarily require further testing, but changing the optical path or optical train of elements to accommodate the repackaging would normally require retesting.
- A reseller of a certified device wishes to sell the device under its own label or under the original label. The certified device must remain intact, unmodified, and as a stand-alone product with no added HW/SW. If relabeled by reseller, the certification is only valid when that label does in fact contain the originally certified device, i.e., no blanket certification for rebrands.<sup>10</sup>

An end user receives a certified device to be used “as is” without modification (an end-user does not need its own certification).

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<sup>9</sup> Except for inherent image quality changes in specific situations, e.g., when recertifying a 1000 ppi scanner at 500 ppi.

<sup>10</sup> If there is no Fast Track testing, the device will not be listed under the resellers name in the FBI certification list. Instead it will remain listed / certified under the original vendor and device name. A separate reseller listing requires some Fast Track data.

**Appendix Table F-6 Fast Track Certification Procedures (Common Scenarios)**

Fast Track Certification	Type	Test Data to be Provided to FBI/CJIS	Requirements Compliance within Appendix F
Livescanner	<p>Vendor A incorporates vendor B's certified device into vendor A's value-added system.</p> <p>Vendor adds (or deletes) platen membrane to certified device.</p>	<p>Livescans from 5 subjects (10 rolls and 4 plains, each subject)</p> <p>Sinewave or bar target scans (target supplied by vendor) and livescans from 5 subjects (10 rolls and 4 plains, each subject).</p>	<p>Section 2.6</p> <p>Sections 2.1, 2.3, and 2.6</p>
Cardscanner	Vendor A incorporates vendor B's certified device into vendor A's value-added system.	Ten 10-print card scans (cards supplied by FBI/CJIS)	Section 2.6
Cardscanner with Automatic Document Feeder (ADF)	Vendor recertifies manual card scanner for use with ADF.	100 10-print card scans (cards supplied by FBI/CJIS)	Section 2.6
Printer	Vendor A incorporates vendor B's certified device into vendor A's value-added system.	Print of printer test target (target supplied by FBI/CJIS)	all subsections under section 4.0 pertaining to digital test target
1000 ppi fingerprint scanner as 500 ppi fingerprint scanner	Vendor recertifies its own fingerprint scanner in alternate operating mode.	<p>Cardscanner:</p> <p>Sinewave target scans (target supplied by vendor) and ten 10-print card scans (cards supplied by FBI/CJIS)</p> <p>Livescanner:</p> <p>Sinewave or bar target scans (target supplied by vendor) and livescans from 5 subjects (10 rolls and 4 plains, each subject)</p>	Sections 2.1, 2.3, and 2.6



## **Appendix F - Definition of Terms:**

**HW** – Hardware, which may include firmware

**SW** – Software, which may include firmware

**COTS** – Commercial-Off-The-Shelf product

**Vendor** – generic term to include Original Equipment Manufacturer (OEM), reseller, VAR, product assembler, systems integrator, and similar.

**Full IQS Certification** – a complete set of test data covering all IQS requirements is submitted.

**Fast Track IQS Certification** – a partial set of test data covering defined IQS requirements is submitted.

## APPENDIX F - REFERENCES

*Mobile ID Device Best Practice Recommendation and Specification*, Aug 2009, National Institute of Standards and Technology (NIST), available at <http://fingerprint.nist.gov/mobileid>

*Personal Identity Verification (PIV) Image Quality Specifications for Single Finger Capture Devices*, FBI/CJIS Biometric Specifications, 10 July 2006, available at <http://www.fbibiospecs.org/fbibiometric/docs/pivs-spec.pdf>

*Test Procedures for Verifying IAFIS Image Quality Requirements for Fingerprint Scanners and Printers*, v1.3, MITRE Technical Report MTR050016R6, May 2012.

*NIST Special Publication 500-290 - Data Format for the Interchange of Fingerprint, Facial, and Other Biometric Information*, January 2011, National National Institute of Standards and Technology (NIST), available at [http://www.nist.gov/itl/iad/ig/ansi\\_standard.cfm](http://www.nist.gov/itl/iad/ig/ansi_standard.cfm)

## APPENDIX G: RESERVED

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## **APPENDIX H: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-7 LOGICAL RECORDS**

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Table H-1 summarizes the content of each of the fields in the Type-7 record. However, the byte counts do not account for any separator characters.

For EBTS transactions, Field 1.012: Nominal transmitting resolution (NTR) specifies the nominal transmitting resolution for fingerprint images transmitted in Type-4 or Type-7 records. For Type-7 records, the transmitting resolution shall either be 495-505ppi (500+-1%) or 990-1010ppi (1000+-1%). For transactions that do not contain Type-3 through Type-7 fingerprint image records, this field shall be set to "00.00". A single transaction can only contain multiple Type-4 and/or Type-7 records if all images have the same resolution.

**Table H-1 Field List for Type-7 (Miscellaneous Image) Logical Records**

Identifier	Condition	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Max. No. of Bytes
				Min.	Max.	Min.	Max.	
LEN	M	LOGICAL RECORD LENGTH	B	4	4	1	1	4
IDC	M	INFORMATION DESIGNATION CHARACTER	B	1	1	1	1	1
IMP	M	IMPRESSION TYPE	B	1	1	1	1	1
FGP	M	FINGER POSITION	B	6	6	1	1	6
ISR	M	IMAGE SCANNING RESOLUTION	B	1	1	1	1	1
HLL	M	HORIZONTAL LINE LENGTH	B	2	2	1	1	2
VLL	M	VERTICAL LINE LENGTH	B	2	2	1	1	2
GCA	M	GRAYSCALE COMPRESSION ALGORITHM	B	1	1	1	1	1
IMG	M	IMAGE DATA	B	1	6,200,000	1	1	6,200,000

# APPENDIX I: SUMMARY LOGICAL RECORD LAYOUTS FOR TYPE-2 DATA MANAGEMENT TRANSACTIONS

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## 1.0 Introduction

Appendix I presents the summary of the Type-2 logical record layouts for Data Management transactions. Table I-1 is a summarization representation of these transactions. For detailed specifications of individual fields of these record sets, see Appendix C.

## 2.0 Interpretation of the Table

The column headers at the top of the page select a particular transaction. The row headers in the left margin give the tag number and ID for each field. The cell at the intersection of any given row and column gives the cardinality for the use of that field (row) in that transaction (column). If that cell is blank, the field is not used in that record. In all cases, the minimum number of occurrences for a mandatory field is one, and zero for an optional field.

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	BDEC	BDECR	BDEL	BDELR	CDEL	CDELR	CPD	DSPE	DSPR	PDR	ERRA	FIS
<a href="#">2.001 LEN</a>	1	1	1	1	1	1	1	1	1	1	1	1
<a href="#">2.002 IDC</a>	1	1	1	1	1	1	1	1	1	1	1	1
<a href="#">2.003 FFN</a>												
<a href="#">2.005 RET</a>												
<a href="#">2.006 ATN</a>	1	1	1	1	1	1	0.1	0.1	0.1	0.1	0.1	1
<a href="#">2.007 SCO</a>							0.9	0.9	0.9	0.9	0.9	0.9
<a href="#">2.009 OCA</a>												
<a href="#">2.010 CIN</a>			0.1	0.1								
<a href="#">2.011 CIX</a>			0.1	0.1								
<a href="#">2.012 LCN</a>												
<a href="#">2.013 LCX</a>												
<a href="#">2.014 FBI</a>	1	1	0.1	1..25	1	1	1	0.1	0.1	1		1
<a href="#">2.015 SID</a>								0.1	0.1			0.1
<a href="#">2.016 SOC</a>								0.4	0.4			
<a href="#">2.017 MNU</a>								0.1	0.1			
<a href="#">2.018 NAM</a>												0.1
<a href="#">2.019 AKA</a>												
<a href="#">2.020 POB</a>								0.1	0.1			
<a href="#">2.021 CTZ</a>								0.5	0.5			
<a href="#">2.022 DOB</a>												
<a href="#">2.023 AGR</a>												
<a href="#">2.024 SEX</a>								0.1	0.1			
<a href="#">2.025 RAC</a>								0.1	0.1			
<a href="#">2.026 SMT</a>												
<a href="#">2.027 HGT</a>								0.1	0.1			
<a href="#">2.028 HTR</a>												
<a href="#">2.029 WGT</a>								0.1	0.1			
<a href="#">2.030 WTR</a>												
<a href="#">2.031 EYE</a>								0.1	0.1			
<a href="#">2.032 HAI</a>								0.1	0.1			
<a href="#">2.033 FPC</a>												
<a href="#">2.034 PAT</a>												
<a href="#">2.035 PPA</a>												0.1
<a href="#">2.037 RFP</a>												
<a href="#">2.038 DPR</a>												1
<a href="#">2.039 EAD</a>												
<a href="#">2.040 OCP</a>												
<a href="#">2.041 RES</a>												
<a href="#">2.042 MIL</a>												
<a href="#">2.043 TSR</a>												
<a href="#">2.044 GEO</a>												
<a href="#">2.045 DOA</a>							1	1	1	1		
<a href="#">2.047 ASL</a>												

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	BDEC	BDECR	BDEL	BDELR	CDEL	CDELR	CPD	DSPE	DSPR	PDR	ERRA	FIS
<a href="#">2.049 EID</a>												
<a href="#">2.051 CSL</a>								1..40				
<a href="#">2.053 OFC</a>												
<a href="#">2.054 SSD</a>												
<a href="#">2.055 SLE</a>												
<a href="#">2.056 ICO</a>												
<a href="#">2.057 FNR</a>												
<a href="#">2.059 SRF</a>	1											
<a href="#">2.060 MSG</a>		0..1		0..1		0..1					1..11	
<a href="#">2.061 CST</a>												
<a href="#">2.062 IMT</a>												
<a href="#">2.064 CAN</a>												
<a href="#">2.065 RSR</a>												
<a href="#">2.067 IMA</a>												
<a href="#">2.070 RAP</a>												
<a href="#">2.071 ACN</a>									1			
<a href="#">2.072 FIU</a>												
<a href="#">2.073 CRI</a>	1..3	1..3	1..3	1..3	0..3	0..3	1..3	0..3	0..3	1..3	0..3	0..3
<a href="#">2.074 FGP</a>	0..1											
<a href="#">2.075 ERS</a>												
<a href="#">2.076 PRI</a>												
<a href="#">2.078 PEN</a>												
<a href="#">2.079 NCR</a>												
<a href="#">2.080 EXP</a>										0..1		
<a href="#">2.082 REC</a>										1		
<a href="#">2.083 ULF</a>												
<a href="#">2.084 AMP</a>												0..1
<a href="#">2.086 SCNA</a>												
<a href="#">2.087 TAA</a>												
<a href="#">2.088 NOT</a>												
<a href="#">2.089 MSC</a>												
<a href="#">2.091 RCD1</a>												
<a href="#">2.092 RCD2</a>												
<a href="#">2.094 CCN</a>								0..1	0..1			
<a href="#">2.095 RFR</a>												
<a href="#">2.096 RPR</a>												
<a href="#">2.098 NDR</a>												
<a href="#">2.099 SAN</a>								0..1	0..1			
<a href="#">2.2001 NAM1</a>												
<a href="#">2.2002 NAM2</a>												
<a href="#">2.2003 NAM3</a>												
<a href="#">2.2004 NAM4</a>												
<a href="#">2.2005 NAM5</a>												



**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	BDEC	BDECR	BDEL	BDELR	CDEL	CDELR	CPD	DSPE	DSPR	PDR	ERRA	FIS
<a href="#">2.2006 CSF</a>												
<a href="#">2.2007 SDOB</a>												
<a href="#">2.2008 SNAM</a>												
<a href="#">2.2009 PTY</a>												
<a href="#">2.2010 NIR</a>												
<a href="#">2.2011 *tbd</a>												
<a href="#">2.2012 IIR</a>												
<a href="#">2.2014 *tbd</a>												
<a href="#">2.2015 RBXD</a>												
<a href="#">2.2016 DNAF</a>												
<a href="#">2.2017 DORI</a>												
<a href="#">2.2018 DNAC</a>												
<a href="#">2.2019 SEAL</a>												
<a href="#">2.2020 RBR</a>												
<a href="#">2.2021 IFS</a>								1	1			
<a href="#">2.2022 CIDN</a>												
<a href="#">2.2023 SII</a>												
<a href="#">2.2024 HTI</a>												
<a href="#">2.2025 GEO_TIME</a>												
<a href="#">2.2026 GEO_CORD</a>												
<a href="#">2.2027 DATUM_ID</a>												
<a href="#">2.2028 BID</a>												
<a href="#">2.2029 BSI</a>	0..1		0..1									
<a href="#">2.2030 PPD</a>												
<a href="#">2.2031 BIA</a>												
<a href="#">2.2032 ATR</a>												
<a href="#">2.2033 CNL</a>												
<a href="#">2.2034 ULR</a>	0..1											
<a href="#">2.2035 EVI</a>					1							0..1
<a href="#">2.2037 ESI</a>												
<a href="#">2.2038 XRS</a>												
<a href="#">2.2039 RBMI</a>												
<a href="#">2.2040 RBT</a>												
<a href="#">2.2042 IAQ</a>												
<a href="#">2.2043 ITVFI</a>												
<a href="#">2.2044 RISCF</a>												
<a href="#">2.2045 FSI</a>												
<a href="#">2.2046 TLI</a>												
<a href="#">2.2048 RBSI</a>												
<a href="#">2.2049 RBTB</a>												
<a href="#">2.2051 HNOTI</a>												
<a href="#">2.2052 MAI</a>								0..1	0..1			
<a href="#">2.2054 RBSD</a>												

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	<a href="#">BDEC</a>	<a href="#">BDECR</a>	<a href="#">BDEL</a>	<a href="#">BDELR</a>	<a href="#">CDEL</a>	<a href="#">CDELR</a>	<a href="#">CPD</a>	<a href="#">DSPE</a>	<a href="#">DSPR</a>	<a href="#">PDR</a>	<a href="#">ERRA</a>	<a href="#">FIS</a>
<a href="#">2.2060 IVFI</a>												
<a href="#">2.2061 BIE</a>												
<a href="#">2.2062 RBNF</a>												
<a href="#">2.2063 RBOO</a>												
<a href="#">2.2064 RBUD</a>												
<a href="#">2.2065 RBC</a>												
<a href="#">2.2067 RBDI</a>												
<a href="#">2.2070 RBATN</a>												
<a href="#">2.2071 RBST</a>												
<a href="#">2.2100 SED</a>												
<a href="#">2.2101 SST</a>												
<a href="#">2.2102 RSC</a>												
<a href="#">2.2103 STI</a>												
<a href="#">2.2104 SRA</a>												

<sup>1</sup> If known, mandatory to enter.

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	<u>FISR</u>	<u>RBSCRM</u>	<u>RBSCVL</u>	<u>RBSR</u>	<u>RBMNT</u>	<u>RBMNTR</u>	<u>SPMNT</u>	<u>SPMNTR</u>	<u>SRNR</u>	<u>ULD</u>	<u>ULDR</u>	<u>XACT</u>	<u>XACTR</u>
<u>2.001 LEN</u>	1	1	1	1	1	1	1	1	1	1	1	1	1
<u>2.002 IDC</u>	1	1	1	1	1	1	1	1	1	1	1	1	1
<u>2.003 FFN</u>													
<u>2.005 RET</u>													
<u>2.006 ATN</u>	1	0.1	0.11	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1
<u>2.007 SCO</u>	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9		
<u>2.009 OCA</u>		1		0.1					0.1				
<u>2.010 CIN</u>										1	1		
<u>2.011 CIX</u>										1	1		
<u>2.012 LCN</u>													
<u>2.013 LCX</u>													
<u>2.014 FBI</u>	1	1	1	1	1	1	0.1	0.1	1			1	1
<u>2.015 SID</u>	0.1						0.1	0.1					
<u>2.016 SOC</u>									0.4				
<u>2.017 MNU</u>									0.4				
<u>2.018 NAM</u>	0.1	1	1	1	0.1	1	0.1	0.1	1				
<u>2.019 AKA</u>									0.10				
<u>2.020 POB</u>									1				
<u>2.021 CTZ</u>									0.10				
<u>2.022 DOB</u>		1	1	1	0.1	1			1.5				
<u>2.023 AGR</u>													
<u>2.024 SEX</u>									1				
<u>2.025 RAC</u>									1				
<u>2.026 SMT</u>									0.10				
<u>2.027 HGT</u>									1				
<u>2.028 HTR</u>													
<u>2.029 WGT</u>									1				
<u>2.030 WTR</u>													
<u>2.031 EYE</u>									1				
<u>2.032 HAI</u>									1				
<u>2.033 FPC</u>													
<u>2.034 PAT</u>													
<u>2.035 PPA</u>													
<u>2.037 RFP</u>													
<u>2.038 DPR</u>			0.1				0.1						
<u>2.039 EAD</u>													
<u>2.040 OCP</u>													
<u>2.041 RES</u>													
<u>2.042 MIL</u>													
<u>2.043 TSR</u>													
<u>2.044 GEO</u>													
<u>2.045 DOA</u>									1				
<u>2.047 ASL</u>									1.40				

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	FISR	RBSCRM	RBSCVL	RBSR	RBMNT	RBMNTR	SPMNT	SPMNTR	SRNR	ULD	ULDR	XACT	XACTR
<a href="#">2.049 EID</a>													
<a href="#">2.051 CSL</a>									0.40				
<a href="#">2.053 OFC</a>													
<a href="#">2.054 SSD</a>									1				
<a href="#">2.055 SLE</a>									0.1				
<a href="#">2.056 ICO</a>													
<a href="#">2.057 FNR</a>													
<a href="#">2.059 SRF</a>													
<a href="#">2.060 MSG</a>	0..11			0..10	0..11	0..1		0..1				0..1	
<a href="#">2.061 CST</a>													
<a href="#">2.062 IMT</a>							0..1	0..6					
<a href="#">2.064 CAN</a>													
<a href="#">2.065 RSR</a>													
<a href="#">2.067 IMA</a>													
<a href="#">2.070 RAP</a>		0..1											
<a href="#">2.071 ACN</a>													
<a href="#">2.072 FIU</a>	0..13												
<a href="#">2.073 CRI</a>	1..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3	0..3		
<a href="#">2.074 FGP</a>													
<a href="#">2.075 ERS</a>				0..1		0..1						0..1	
<a href="#">2.076 PRI</a>													
<a href="#">2.078 PEN</a>													
<a href="#">2.079 NCR</a>													
<a href="#">2.080 EXP</a>													
<a href="#">2.082 REC</a>													
<a href="#">2.083 ULF</a>													
<a href="#">2.084 AMP</a>													
<a href="#">2.086 SCNA</a>										1	1		
<a href="#">2.087 TAA</a>													
<a href="#">2.088 NOT</a>													
<a href="#">2.089 MSC</a>													
<a href="#">2.091 RCD1</a>													
<a href="#">2.092 RCD2</a>													
<a href="#">2.094 CCN</a>													
<a href="#">2.095 RFR</a>													
<a href="#">2.096 RPR</a>													
<a href="#">2.098 NDR</a>							1	1					
<a href="#">2.099 SAN</a>													
<a href="#">2.2001 NAM1</a>													
<a href="#">2.2002 NAM2</a>													
<a href="#">2.2003 NAM3</a>													
<a href="#">2.2004 NAM4</a>													
<a href="#">2.2005 NAM5</a>													

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	FISR	RBSCRM	RBSCVL	RBSR	RBMNT	RBMNTR	SPMNT	SPMNTR	SRNR	ULD	ULDR	XACT	XACTR
2.2006 CSF													
2.2007 SDOB													
2.2008 SNAM													
2.2009 PTY							0..1						
2.2010 NIR													
2.2011 *tbd													
2.2012 IIR													
2.2014 *tbd													
2.2015 RBXD		0..1	1	1	0..1	1							
2.2016 DNAF													
2.2017 DORI													
2.2018 DNAC													
2.2019 SEAL													
2.2020 RBR		0..9	0..9	0..9	0..9	0..9							
2.2021 IFS													
2.2022 CIDN													
2.2023 SII													
2.2024 HTI													
2.2025 GEO_TIME													
2.2026 GEO_CORD													
2.2027 DATUM_ID													
2.2028 BID													
2.2029 BSI							0..1	0..53					
2.2030 PPD													
2.2031 BIA													
2.2032 ATR													
2.2033 CNL													
2.2034 ULR													
2.2035 EVI			0..1	0..1			0..1	0..1					
2.2037 ESI												1	1
2.2038 XRS													
2.2039 RBMI					1								
2.2040 RBT		0..40	0..40	1..40	0..40	1..40							
2.2042 IAQ													
2.2043 ITVFI													
2.2044 RISCF													
2.2045 FSI							1						
2.2046 TLI													
2.2048 RBSI				1	1	1							
2.2049 RBDT				0..1		0..1							
2.2051 HNOTI													
2.2052 MAI							1	1					
2.2054 RBSD				1		1							

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	<u>FISR</u>	<u>RBSCRM</u>	<u>RBSCVL</u>	<u>RBSR</u>	<u>RBMNT</u>	<u>RBMNTR</u>	<u>SPMNT</u>	<u>SPMNTR</u>	<u>SRNR</u>	<u>ULD</u>	<u>ULDR</u>	<u>XACT</u>	<u>XACTR</u>
<u>2.2060 IVFI</u>													
<u>2.2061 BIE</u>	0..36												
<u>2.2062 RBNF</u>		1	1	1	0..1	1							
<u>2.2063 RBOO</u>		0..1	0..1	1	0..1	1							
<u>2.2064 RBUD</u>		0..10	0..10	0..10	0..10	0..10							
<u>2.2065 RBC</u>		1	1	1									
<u>2.2067 RBDI</u>		0..1		0..1	0..1	1							
<u>2.2070 RBATN</u>		0..1	0..1	0..1	0..1	0..1							
<u>2.2071 RBST</u>			1	0..1		0..1							
<u>2.2100 SED</u>									1				
<u>2.2101 SST</u>									1..8				
<u>2.2102 RSC</u>									0..1				
<u>2.2103 STT</u>									0..1				
<u>2.2104 SRA</u>									1				

<sup>1</sup> If known, mandatory to enter.

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	<a href="#">XMNI</a>	<a href="#">XMNTR</a>
<a href="#">2.001 LEN</a>	1	1
<a href="#">2.002 IDC</a>	1	1
<a href="#">2.003 FFN</a>		
<a href="#">2.005 RET</a>		
<a href="#">2.006 ATN</a>	1	1
<a href="#">2.007 SCO</a>	0..9	0..9
<a href="#">2.009 OCA</a>		
<a href="#">2.010 CIN</a>		
<a href="#">2.011 CIX</a>		
<a href="#">2.012 LCN</a>		
<a href="#">2.013 LCX</a>		
<a href="#">2.014 FBI</a>	1	1
<a href="#">2.015 SID</a>		
<a href="#">2.016 SOC</a>		
<a href="#">2.017 MNU</a>		
<a href="#">2.018 NAM</a>		
<a href="#">2.019 AKA</a>		
<a href="#">2.020 POB</a>		
<a href="#">2.021 CTZ</a>		
<a href="#">2.022 DOB</a>		
<a href="#">2.023 AGR</a>		
<a href="#">2.024 SEX</a>		
<a href="#">2.025 RAC</a>		
<a href="#">2.026 SMT</a>		
<a href="#">2.027 HGT</a>		
<a href="#">2.028 HTR</a>		
<a href="#">2.029 WGT</a>		
<a href="#">2.030 WTR</a>		
<a href="#">2.031 EYE</a>		
<a href="#">2.032 HAI</a>		
<a href="#">2.033 FPC</a>		
<a href="#">2.034 PAT</a>		
<a href="#">2.035 PPA</a>		
<a href="#">2.037 RFP</a>		
<a href="#">2.038 DPR</a>		
<a href="#">2.039 EAD</a>		
<a href="#">2.040 OCP</a>		
<a href="#">2.041 RES</a>		
<a href="#">2.042 MIL</a>		
<a href="#">2.043 TSR</a>		
<a href="#">2.044 GEO</a>		
<a href="#">2.045 DOA</a>		
<a href="#">2.047 ASL</a>		

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	XMNI	XMNTR
<a href="#">2.049 EID</a>		
<a href="#">2.051 CSL</a>		
<a href="#">2.053 OFC</a>		
<a href="#">2.054 SSD</a>		
<a href="#">2.055 SLE</a>		
<a href="#">2.056 ICO</a>		
<a href="#">2.057 FNR</a>		
<a href="#">2.059 SRF</a>		
<a href="#">2.060 MSG</a>		
<a href="#">2.061 CST</a>		
<a href="#">2.062 IMT</a>		
<a href="#">2.064 CAN</a>		
<a href="#">2.065 RSR</a>		
<a href="#">2.067 IMA</a>		
<a href="#">2.070 RAP</a>		
<a href="#">2.071 ACN</a>		
<a href="#">2.072 FIU</a>		
<a href="#">2.073 CRI</a>		
<a href="#">2.074 FGP</a>		
<a href="#">2.075 ERS</a>		
<a href="#">2.076 PRI</a>		
<a href="#">2.078 PEN</a>		
<a href="#">2.079 NCR</a>		
<a href="#">2.080 EXP</a>		
<a href="#">2.082 REC</a>		
<a href="#">2.083 ULF</a>		
<a href="#">2.084 AMP</a>		
<a href="#">2.086 SCNA</a>		
<a href="#">2.087 TAA</a>		
<a href="#">2.088 NOT</a>		
<a href="#">2.089 MSC</a>		
<a href="#">2.091 RCD1</a>		
<a href="#">2.092 RCD2</a>		
<a href="#">2.094 CCN</a>		
<a href="#">2.095 RFR</a>		
<a href="#">2.096 RPR</a>		
<a href="#">2.098 NDR</a>		
<a href="#">2.099 SAN</a>		
<a href="#">2.2001 NAM1</a>		
<a href="#">2.2002 NAM2</a>		
<a href="#">2.2003 NAM3</a>		
<a href="#">2.2004 NAM4</a>		
<a href="#">2.2005 NAM5</a>		



**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	XMNI	XMNTR
<a href="#">2.2006 CSE</a>		
<a href="#">2.2007 SDOB</a>		
<a href="#">2.2008 SNAM</a>		
<a href="#">2.2009 PTY</a>		
<a href="#">2.2010 NIR</a>		
<a href="#">2.2011 *tbd</a>		
<a href="#">2.2012 IIR</a>		
<a href="#">2.2014 *tbd</a>		
<a href="#">2.2015 RBXD</a>		
<a href="#">2.2016 DNAF</a>		
<a href="#">2.2017 DORI</a>		
<a href="#">2.2018 DNAC</a>		
<a href="#">2.2019 SEAL</a>		
<a href="#">2.2020 RBR</a>		
<a href="#">2.2021 IFS</a>		
<a href="#">2.2022 CIDN</a>		
<a href="#">2.2023 SII</a>		
<a href="#">2.2024 HTI</a>		
<a href="#">2.2025 GEO_TIME</a>		
<a href="#">2.2026 GEO_CORD</a>		
<a href="#">2.2027 DATUM_ID</a>		
<a href="#">2.2028 BID</a>		
<a href="#">2.2029 BSI</a>		
<a href="#">2.2030 PPD</a>		
<a href="#">2.2031 BIA</a>		
<a href="#">2.2032 ATR</a>		
<a href="#">2.2033 CNL</a>		
<a href="#">2.2034 ULR</a>		
<a href="#">2.2035 EVI</a>		
<a href="#">2.2037 ESI</a>	1	1
<a href="#">2.2038 XRS</a>		
<a href="#">2.2039 RBMI</a>		
<a href="#">2.2040 RBT</a>		
<a href="#">2.2042 IAQ</a>		
<a href="#">2.2043 ITVFI</a>		
<a href="#">2.2044 RISCF</a>		
<a href="#">2.2045 FSI</a>		
<a href="#">2.2046 TLI</a>		
<a href="#">2.2048 RBSI</a>		
<a href="#">2.2049 RBTD</a>		
<a href="#">2.2051 HNOTI</a>		
<a href="#">2.2052 MAI</a>	1	1
<a href="#">2.2054 RBSD</a>		

**Table I-1 Summary Field Lists for Data Management Transactions  
(Maximum Occurrences of Each Element for Each Logical Record Type)**

Tag Element	<a href="#">XMNI</a>	<a href="#">XMNTR</a>
<a href="#">2.2060 IVFI</a>		
<a href="#">2.2061 BIE</a>		
<a href="#">2.2062 RBNE</a>		
<a href="#">2.2063 RBOQ</a>		
<a href="#">2.2064 RBUJ</a>		
<a href="#">2.2065 RBC</a>		
<a href="#">2.2067 RBDI</a>		
<a href="#">2.2070 RBATN</a>		
<a href="#">2.2071 RBST</a>		
<a href="#">2.2100 SED</a>		
<a href="#">2.2101 SST</a>		
<a href="#">2.2102 RSC</a>		
<a href="#">2.2103 STT</a>		
<a href="#">2.2104 SRA</a>		

## **APPENDIX J: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-9 LOGICAL RECORDS**

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This appendix provides the field specifications for submitting a Type-9 Image Feature record with a transaction. Along with a detailed explanation of the FBI IAFIS block fields and the Extended Feature Set block that can be included in this record type, the XML tag name has been included. Specifications for minutiae data are based on the ANSI/NIST-ITL Type-9 Record. As NGI moves forward with replacing latent functionality, CJIS will be adding the 'public' templates (Extended Feature Set). These templates are outlined at the end of the detailed CJIS block fields. This standard has additional requirements for this message and therefore contains a created substitution element for the abstract ANSI/NIST-ITL element <itl:RecordMinutiae>. This standard uses this element, <ebts:Minutiae>, to represent information specific to an FBI Biometric Identification message. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description.

Refer to the ANSI/NIST for complete Type-9 field usage and descriptions. The following subsections layout in alphabetically order the complete definition of fields used by NGI while processing a Type-9 record. NGI will allow for both FBI IAFIS Feature Set and the ANSI/NIST Extended Feature Set. When both sets are present, NGI will use the Extended Feature Set. When features are being returned, NGI will place those features in the Extended Feature Set only.

## Type-9 Data Dictionary

The T-9 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

### 1) Common Types

The following list of fields are those common to both the FBI IAFIS Feature Set and the Extended Feature Set. Refer to the ANSI/NIST-ITL Standard for complete definition and usage of the following fields.

<b><u>FMT</u></b>	<b>9.004</b>	<b>Minutiae Format.</b>	<b>&lt;ansi-nist:MinutiaeFormatNISTStandardIndicator&gt;</b>
<b><u>IDC</u></b>	<b>9.002</b>	<b>Information Designation Character.</b>	<b>&lt;ansi-nist:ImageReferenceIdentification&gt;</b>
<b><u>IMP</u></b>	<b>9.003</b>	<b>Impression Type.</b>	<b>&lt;ansi-nist:MinutiaeImpressionCaptureCategoryCode&gt;</b>
<b><u>LEN</u></b>	<b>9.001</b>	<b>Logical Record Length.</b>	

### 2) FBI IAFIS Feature Set Fields

The following list of fields represent the FBI IAFIS Feature Set. These fields are supported for backward compatibility with LFFS searches of fingerprint (FGP 0-10) features only.

<b><u>APC</u></b>	<b>9.017</b>	<b><u>AFIS/FBI Pattern Classification.</u></b>	<b>&lt;ebts:MinutiaeFingerPattern&gt;</b>
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This field contains one to three subfields. For native encoding, these fields will be separated by the  $R_s$  separator with each subfield composed of three information items separated by the  $U_s$  separator character. Each subfield reports a possible basic pattern class (APAT) and the ridge counts (RCN1, RCN2) defining its subpattern class. The AFIS/FBI automatic classifier recognizes only four basic pattern classes: arch (AU), left slant loop (LS), right slant loop (RS), and whorl (WU). It further subdivides the basic pattern classes of loops and whorls according to the count of ridges crossed or touched along a straight line joining the core(s) to the delta(s). The count is one more than the number of intervening ridges. For latents, the latent examiner is expected to make a best estimate as opposed to a range. AFIS/FBI treats all indicated pattern classes equally (*i.e.*, no significance given to the order of the possible classes provided). AFIS/FBI will apply a suitable tolerance to the specified ridge count for search space penetration.

The tagged field accommodates a primary pattern and up to two reference patterns in the one-to-three subfields. The first information item of a subfield contains the two-character symbol for the pattern being designated. The second and third information items contain the appropriate subpattern class ridge count between the core(s) and the delta(s) with permissible values of 1 to 30 for actual ridge counts. For native encoding, a zero (0) should be entered if a ridge count is not appropriate; a thirty-one (31) if it was appropriate but not counted or indeterminate. For XML encoding, the field is omitted if the value is zero (0). Both information fields in the native encoding are zero for an arch, the second information item in a subfield should be zero if the pattern for the subfield is a loop, and neither information item should be zero for a whorl. If a whorl is indicated in pattern classification, the second information item (RCN1) of a subfield contains the ridge count from the left delta to the downward opening core, and the third information item (RCN2) contains the ridge count from the right delta to the upward opening core. This implies that a central pocket whorl will have both a downward and an upward opening (directed) core generally aligned along the major axis of the innermost ellipse. If the automatic or manual classifier indicates all four basic patterns are possible, then the fingerprint should be designated as “fully referenced” by providing only one subfield with the first information item “UC”; the second and third information items should both be “31.” If a particular fingerprint was not characterized for a tenprint native mode search request, no Type-9 logical record should be submitted for that finger position, and the classification code for the missing finger must be placed in the Type-2 pattern class field.

## Type-9 Data Dictionary

AFIS/FBI Pattern Classification Table

Description	First Information Item	Second Information Item	Third Information Item
Arch (type not designated)	AU	0	0
Left slant loop	LS	1 – 31	0
Right slant loop	RS	1 – 31	0
Whorl (type not designated)	WU	1 – 31	1 – 31
Complete scar	SR	0	0
Amputation	XX	0	0
Unable to classify	UC	0 or 31	0 or 31

**CHQ 9.024 Characterization Quality.** *<ebts:MinutiaCharacterizationQualityValue>*

This is a single information item field of three numeric characters with the possible value of 1 to 254. Within AFIS/FBI, the principal quality parameter is the “Equivalent Number of Minutiae.” The distribution of the parameter over thousands of fingerprints approximates a Gaussian distribution with a mean of about 50 and a standard deviation of about 12. The equivalent number of minutiae is calculated as the sum of the weighted normalized quality with the weighting being the number of qualified neighbors for the minutiae divided by the maximum number of neighbors (eight). The normalized minutiae quality ranges from unity (best) to zero (worst). A qualified neighbor would be another minutia with a reliable separating ridge count (less than 14) and within a reliable distance (not more than 1/5 inch).

**CLQ 9.025 Classifier Quality.** *<ebts:MinutiaClassifierQualityValue>*

This is a single information item field of seven characters representing a positive real number between one (1.0000) and 99 (99.9999) indicating the quality or confidence of the automatic classification. The presence of the information item may reduce the AFIS/FBI processing load, but its absence will not degrade AFIS/FBI performance. A value of 1.0000 indicates best possible quality or confidence; increasing values indicate progressively worse quality or confidence. The information item format shall be XX.YYYY in which XX represents the integer portion and YYYY the fractional portion to four decimal places with a decimal point (period) between.

**COF 9.019 Coordinate Offsets.** *<ebts:MinutiaCoordinateOffsets>*

This field allows the recording of translation, rotation, and image cropping employed in the characterization process to allow the examiner or an analyst to overlay onto the original or intermediate image the features reported in this record. The field contains five eight-character information items. For native encoding, each item will be separated by the  $U_s$  separator. Unused information items may be empty, but the  $U_s$  separators must be included.

For AFIS/FBI, the units are in original image pixels and degrees using standard image processing coordinates; that is, (0,0) origin at the upper left, column index increasing from left to right, and row index increasing from top to bottom. For the native encoding, the column and row coordinate indexes (XYP) shall be coded as a single eight-digit integer number composed of a four-digit column coordinate (X) connected to a four-digit row coordinate (Y) using a format of XXXYYYYY. A minus sign is permitted in the leftmost digit of a four-digit group. For the XML encoding, there will be separate fields for X and Y coordinates.

The five information items are:

- 1 The offset to the upper left corner of a non-rotated sub-image used subsequently in image processing

## Type-9 Data Dictionary

- 2 The coordinates of the center of rotation within the sub-image about which the sub-image is rotated
- 3 The clockwise rotation angle (THET) in ten-thousandths of a degree resolution (*e.g.* , 072.2342) including the decimal point
- 4 The coordinates of the center of rotation in the rotated sub-image after the sub-image has been translated to eliminate negative column and row indexes
- 5 The upper-left-corner column and row offsets to a cropped sub-image taken from the rotated image once adjusted to eliminate negative coordinate values.

### **CRA 9.021 Core(s) Attribute.**

*<ebs:MinutiaeFingerCoreAttributePosition>*

This field is for cores that can be perceived in the fingerprint (both tenprint and latent). If there is no core perceived in the fingerprint image, the tagged field should be omitted. This field contains up to two subfields (one subfield for each core). For native encoding, the subfields will be separated by the  $R_S$  separator. Each subfield contains three information items representing the attributes of each core. For native encoding, these information items will be separated by the  $U_S$  separator.

- The first information item of a subfield contains the X and Y coordinate position of the core (XYM). The position shall be established either automatically or manually according to the definitions presented in The Science of Fingerprints. The X and Y values shall be coded as a single eight-digit integer number composed of the four-digit X coordinate (column) followed by the four-digit Y coordinate (row) using a format of XXXXYYYY. The X coordinate and Y coordinate are in units of 10 micrometers with the origin at the upper left. Core positions shall be in the same coordinate system as the minutiae. For the XML encoding, there will be separate fields for X and Y coordinates.
- The second information item of a subfield is of three digit size and contains the direction of the core in integer degrees (DID). The direction is that of the core opening through the center of curvature for the innermost recurve at maximum curvature. The direction angle is positive counterclockwise from the reference horizontal to the right. Direction angles shall be reported between “001” and “360” degrees only. The value “000” shall be reserved for “direction not provided” while “360” shall be equivalent to zero degrees.
- The third information item of a subfield is of four digit size representing the radius of position uncertainty (PUM) in the manual or automatic placement of the core in integer units of 10 micrometers.

### **DLA 9.022 Delta(s) Attributes.**

*<ebs:MinutiaeFingerDeltaAttributePosition>*

This field is for deltas that can be perceived in the fingerprint for both AFIS/FBI latent and tenprint characterizations. If there is no delta perceived in the fingerprint image, the tagged field should be omitted. This field contains up to two subfields (one subfield for each delta). For native encoding, these subfields will be separated by the  $R_S$  separator. Each subfield contains five information items representing the attributes of each delta. For native encoding, these information items will be separated by the  $U_S$  separator.

- The first information item of a subfield consists of eight characters and contains the X and Y coordinate position (XYM) of the delta(s). The position shall be established either automatically or manually according to the definitions presented in The Science of Fingerprints. The X and Y values shall be coded as a single eight-digit integer number composed of the four-digit X coordinate (column) followed by the four-digit Y coordinate (row) using a format of XXXXYYYY. The X coordinate and Y coordinate are in units of 10 micrometers with the origin at the upper left. For the XML encoding, there will be separate fields for X and Y coordinates. Delta positions shall be in the same coordinate system as the minutiae.

## Type-9 Data Dictionary

- The next three information items of a subfield shall be of three-digit size each to contain the three directions of ridge flow (DID) outward from the delta in integer degrees.
  - o The second information item of a subfield is the direction of the ridge flow upward from the delta.
  - o The third information item of a subfield shall be the direction of ridge flow outward from the delta and to the left.
  - o The fourth information item shall be the direction of the ridge flow outward from the delta to the right. The direction angles are positive counterclockwise from the reference horizontal to the right. Direction angles shall be reported between “001” and “360” degrees only. The value “000” shall be reserved for “direction not provided” while “360” shall be equivalent to zero degrees.
- The fifth subfield of four-digit size represents the radius of position uncertainty (PUM) in the manual or automatic placement of the delta in integer units of 10 micrometers.

**FCP**      **9.016**      **Fingerprint Characterization Process.** <*ebts:MinutiaeReadingSystem*>

This field of three information items identifies the characterization equipment and the amount of manual intervention employed in the characterization process. For native encoding, the three information items shall be separated by the  $U_s$  separator.

- The first information item shall contain the name of the organization (VEN) providing the automatic process software.
- The second information item shall be a vendor-supplied, alphanumeric character pair (VID) representing the model and/or version of the automatic process.
- The third information item (MET) shall be an ordered sequence of three characters selected from the following list indicating the degree of automation in the characterization process.

## Type-9 Data Dictionary

**Fingerprint Characterization Process Table**

Description	Code
First (leftmost) character (classification):	
Automatic pattern classification without manual intervention	C
Manually initiated or verified pattern classification	N
Second (middle) character (minutiae generation):	
Minutiae automatically generated, no manual editing or verification	A
Minutiae automatically generated, examiner verified or edited	E
Minutiae manually generated by examiner	M
Third (rightmost) character (ridge count):	
Automatic, synthesized ridge count without manual verification	S
Automatic, actual ridge count without manual verification	T
Automatic ridge count any method, examiner edited or verified	V

**FGN**

**9.014 Finger Number**

*<ansi-nist:MinutiaeFingerPositionCode>*

This AFIS/FBI two-byte field shall contain a character designating the finger position that produced the information in this Type-9 record. If the exact finger position cannot be determined, "00" shall be entered. Multiple codes are not permitted. Possible finger positions for single latent characterizations are specified in the accompanying Type-2 logical record. If multiple latents from the same person are transmitted, the particular finger position corresponding to the Type-9 record must be identified within the Type-9 record.

Allowable codes are taken from the ANSI/NIST-ITL standards, and are as follows:



## Type-9 Data Dictionary

Finger Number Table

Finger Position	Code
Unknown finger	0
Right thumb	1
Right index	2
Right middle	3
Right ring	4
Right little	5
Left thumb	6
Left index	7
Left middle	8
Left ring	9
Left little	10

**MAT 9.023 Minutiae and Ridge Count Data. <ebs:MinutiaDetail>**

This AFIS/FBI field shall contain all of the individual minutiae and ridge count data associated with the current fingerprint impression. It shall be composed of as many subfields as there are minutiae stated in the minutiae count in the tagged field 9.015, NMN. Each subfield shall be devoted to a single minutia and shall consist of multiple information items. For native encoding, subfields shall be separated by the separator character and all information items within a subfield shall be separated by the separator character. The minutiae shall be indexed from one to NMN and need not be ordered according to any particular attribute. The first two information items are required, and the others allow AFIS/FBI to achieve best possible candidate list performance. An information item may be omitted, but its separator character must remain, except all ridge count data must be present with special values designating missing or omitted data.

Index number (MDX): The first information item shall be the index number, which shall be initialized to one and incremented by one for each additional minutia in the fingerprint. This index number serves to identify each individual minutia.

X, Y, and theta values (XYT): The X and Y coordinates are values ranging from zero upward, and the theta direction value, between 000 and 360, shall comprise the second required information item. These three values shall be coded and recorded as a single 11-digit integer number corresponding to the connected X, Y, and theta values, in that order. If the minutia is of Type D, the theta value shall be recorded as "000." The origin of the coordinate system shall be the upper left corner of the image with X increasing to the right and Y increasing downward. For XML encoding, this information field is represented in three separate fields for X, Y, and Theta.

The coordinate system units shall be units of 0.01mm (10 micrometers). The direction of an ending shall be into the ending ridge and the direction of a bifurcation shall be into the white space created by the dividing ridge. Angles shall be in integer degrees measured positive counterclockwise from a reference horizontal and to the right. The XY coordinates shall be applied after all rotation and translation of the image has been accomplished.

Quality measure (QMS): If present, the third information item is the minutiae quality measure. The two-digit values shall range from 0 to 63. The value zero shall indicate a manually encoded minutia. The value "1" shall indicate that no method of indicating a confidence level is available. Values between 2 and 63 shall indicate decreasing levels of confidence, with 2 denoting the greatest confidence.

Minutiae type designation (MNT): The fourth information item is the minutiae type designation. This shall be a single character chosen as follows.

## Type-9 Data Dictionary

Minutiae Type Design Table

Description	Type
Ridge ending	A
Ridge bifurcation	B
Ridge ending or bifurcation, no distinction provided	C
Type other than ending or bifurcation	D

Ridge count data (MRO): The fifth information item is the ridge count data for the nearest neighboring minutia of the indexed minutia. It shall be formatted as a series of eight sub-items, each consisting of a minutiae index number and a ridge count. This information shall be conveyed by combining the identity (MDX) of the neighboring minutia and the ridge count to that of neighboring minutiae into a five digit number. For AFIS/FBI, the minutiae identification index (MDX) shall increase from 1 to 254. The ridge count values (one more than number of intervening ridges) shall range from 0 to 15; with 14 indicating a count greater than 13, and 15 indicating an indeterminate count. Up to eight neighboring minutiae can be recorded, each being the nearest neighbor in an angular sector of 45 degrees (octant) with the zero-th octant centered (+/- 22.5 degrees) and aligned with the direction of the minutiae and increasing in octant index in the counterclockwise direction. If a minutia does not have a neighbor in a particular octant, the value "25515" should be used for the sub-item in native encoding. For XML encoding, this information item is represented in separate fields for the index and ridge count.

Octant residuals (RSO): The last information item of eight ASCII characters indicates into which half of the octant each neighboring minutia lies. This subfield is beneficial for performance but not mandatory. The characters are ordered left to right according to the ascending octant index. The corresponding character shall be 1 if the neighboring minutia lies in the counterclockwise half of the octant. The corresponding character shall be 0 if the neighboring minutia lies in the clockwise half of the octant or if there is no neighboring minutiae in the octant.

**NMN 9.015 Number of Minutiae.** <ansi-nist:MinutiaeQuantity>

This AFIS/FBI field shall contain the count of the number of minutiae recorded for this fingerprint. For AFIS/FBI, the number should not exceed 254. If the number of minutiae provided in this field exceeds the number of minutiae the system can accommodate, the list will be truncated according to the reported minutiae quality. Minutiae below the proximal crease generally are not included.

**ORN 9.020 Orientation Uncertainty.** <ansi-nist:PositionUncertaintyValue>

The orientation uncertainty is a substantial contribution for AFIS/FBI latent fingerprint characterizations and is not used for tenprint searches. This one-to-three-character mandatory field contains an estimate of the deviation in degrees of the latent image (after rotation and translation to support editing and characterization) relative to fingertip up. The entry shall be the absolute value of the angular deviation from "tip-up." The uncertainty would be zero if the impression were made with the extended finger aligned with the vertical of the displayed image. It is expected to be a human visual estimate of "the final image is aligned tip up within about X-degrees." If the examiner can not provide an estimate, the value shall be 180 (unoriented).



**Type-9 EFS fields Utilized by NGI for Matching**

<b>Field</b>	<b>Code</b>	<b>Name</b>	<b>Usage</b>	<b>Comment</b>
ROI	9.300	Region of Interest	Mandatory	Defines where the area within or bounds of the latent image containing the feature data has been specified.
ORT	9.301	Orientation	Optional	If absent, this means print is assumed to be upright $\pm 15^\circ$ ; orientation must be indicated otherwise.
FPP	9.302	Finger/Palm Position	Mandatory	Indicates the source of friction ridge skin (finger or palm); value may be "unknown"
FSP	9.303	Feature Set Profile	Mandatory	This field is used to designate the profile (level of markup) of the type-9 features. The recommended profile is "2" for Quick Minutiae Search.
PAT	9.307	Pattern Classification	Optional	This field is used to specify one or more general pattern classification codes to which the fingerprint may match. Any combinations up to all four possible values are allowed (specifying all four is equivalent to no value and implies "unknown").
COR	9.320	Cores	Optional	All cores must be marked if present in fingerprint images. (Core-like structures in palms may optionally be marked)
DEL	9.321	Deltas	Optional	All deltas must be marked if present in fingerprint images (Delta-like structures in palms may optionally be marked)
MIN	9.331	Minutiae	Optional	All minutiae must be marked if present in the image

**Type-9 EFS fields Populated by the NGI Matcher in an EBTS Response**

Field	Code	Name	Usage	Comment
ROI	9.300	Region of Interest	Mandatory	The ROI provided as part of original template submission, the area within or the bounds of the image from which the features were extracted.
ORT	9.301	Orientation	Optional	If absent, this means print is assumed to be upright $\pm 15^\circ$ ; orientation must be indicated otherwise.
FPP	9.302	Finger/Palm Position	Mandatory	Indicates the source of friction ridge skin (finger or palm); value may be "unknown"
FSP	9.303	Feature Set Profile	Mandatory	This field is used to designate the profile (level of markup) of the type-9 features. All NGI responses will contain "30" for All and Corresponding Minutiae.
PAT	9.307	Pattern Classification	Optional	The classification specified as part of original template or that determined by the encoder; may be "UC" (unable to classify)
FQM	9.316	Friction Ridge Quality Metric	Optional	Quality specified on original template submission or the quality computed by the encoder
COR	9.320	Cores	Optional	Any identified cores will be marked; only for fingerprint images.
DEL	9.321	Deltas	Optional	Any identified deltas will be marked; only for fingerprint images.
MIN	9.331	Minutiae	Mandatory	All identified minutiae will be marked. Note this field contains ALL minutiae from the original template.
MFD	9.350	Method of Feature Detection	Optional	The NGI LFR encoder designation if template was created by that algorithm or not given otherwise (externally created)
COM	9.351	Comment	Optional	Additional information that describes the extractor if this template was automatically generated from image.
CPF	9.361	Corresponding Points or Features	Optional	Matching Features between probe and candidate when requested. The Type Of Correspondence (TOC) to be provided for NGI is 'F' (Feature). Note this field contains the labeled feature that definitely corresponds to the specific feature defined by the Field Number and the Field Occurrence information items.
RRC	9.363	EFS Relative Rotation of Corresponding Print	Optional	This field is used when returning search results with Type 9s to indicate the overall rotation of the probe (or target) print that resulted in the match score with the candidate.



Table J-1 Field List for Type-9 (Minutiae) Native-Mode Logical Record

Identifier	Condition	Applicable	Field No.	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Example Data	Special Characters Allowed	
						Min.	Max.	Min.	Max.			
RSV			9.056 - 9.070	RESERVED FOR MOTOROLA FEATURE SET								
RSV			9.071 - 9.099	RESERVED FOR SAGEM MORPPHO FEATURE SET								
RSV			9.100 - 9.125	RESERVED FOR NEC FEATURE SET								
RSV			9.126 - 9.150	RESERVED FOR MI-378 FIELDS								
RSV			9.151 - 9.175	RESERVED FOR IDENTIX FEATURE SET								
RSV			9.176 - 9.225	OTHER FEATURE SETS - DEFINED FIELDS								
RSV			9.226 - 9.299	Reserved for future use by ANSI/NIST-ITL								
ROI	M	Search/ Response	9.300	REGION OF INTEREST	SET			1	1			
EWI	M			Region of Interest Width	N	1	5	1	1			Maximum of 50,000 Maximum of 50,000 Maximum of 50,000 Maximum of 50,000
EHI	M			Region of Interest Height	N	1	5	1	1			
EHO	O			Region of Interest Horizontal Offset	N	1	5	0	1			
EVO	O			Region of Interest Vertical Offset	N	1	5	0	1			
ROP	O			Region of Interest Polygon	NS	1	1,188	0	1			
ORT	O	Search/ Response	9.301	ORIENTATION	SET			0	1			
EOD	M			Orientation Direction	NS	1	4	1	1			Valid Values: -179 - 180
EUC	O			Orientation Uncertainty	N	1	3	0	1			Valid Values: 0 - 180
FPP	M	Search/ Response	9.302	FINGER, PALM, PLANTAR POSITION	SET			1	20			
FGP	M			Friction Ridge Generalized Position	N	1	2	1	1			Valid values: DST, PRX, MED or UNK Valid values: T, R, or L
FSM	O			Finger Segment	A	3	3	0	1			
OCF	O			Off-Center Fingerprint	A	1	1	0	1			
SGP	O			Segment Polygon	NS	1	1,188	0	1			
FSP	O	Search	9.303	FEATURE SET PROFILE	N	1	2	0	9			
RSV			9.304 - 9.306	Reserved for future use by ANSI/NIST-ITL								
PAT	D	Search/ Response	9.307	PATTERN CLASSIFICATION	SET			0	1			
GCF	M			General Class	A	2	2	1	1			Valid Values: I, O or M
SUB	D			Subclass	A	2	2	0	1			
WDR	D			Whorl-Delta Relationship	A	1	1	0	1			
RQM	O		9.308	RIDGE QUALITY MAP	AN	1	50,000	0	1			
RQF	O		9.309	RIDGE QUALITY MAP FORMAT	SET			0	1			
GSZ	M	Grid Size		N	1	2	1	1			Valid Values: 1 - 41	
RDF	M	Ridge Quality Data Format		A	3	3	1	1			Valid Values: UNC or RLE	
RFM	O		9.310	RIDGE FLOW MAP	AN	1	100,000	0	1		Hexidecimal values	
RFF	O		9.311	RIDGE FLOW MAP FORMAT	SET			0	1			
SFQ	M	Sampling Frequency		N	1	2	1	1			Valid Values: 1 - 41	
RDF	M	Ridge Flow Data Format		AN	3	3	1	1			Valid Values: UNC or B64	
RWM	O		9.312	RIDGE WAVELENGTH MAP	AN	1	100,000	0	1			
RWF	O		9.313	RIDGE WAVELENGTH MAP FORMAT	SET			0	1			
FWS	M	Sampling Frequency		N	1	2	1	1			Valid Value: UNC	
FDF	M	Data Format		AN	3	3	1	1				
TRV	O		9.314	TONAL REVERSAL	A	1	1	0	1			Valid Values: N or P
PLR	O		9.315	POSSIBLE LATERAL REVERSAL	A	1	1	0	1		Valid Values: L or U	
FQM	O	Response	9.316	FRICITION RIDGE QUALITY METRIC	SET			0	9			
QVU	M			Quality Value	N	1	3	1	1			Valid Values: 0 - 100, 254 or 255
QAV	M			Algorithm Vendor Identification	H	4	4	1	1			

Table J-1 Field List for Type-9 (Minutiae) Native-Mode Logical Record

Identifier	Condition	Applicable	Field No.	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Example Data	Special Characters Allowed
						Min.	Max.	Min.	Max.		
QAP	M			Algorithm Product Identification	N	1	5	1	1		Valid Values: 1 - 65,534
PGS	O		9.317	POSSIBLE GROWTH OR SHRINKAGE	SET			0	1		
TGS	M			Growth or Shrinkage Type	A	1	1	1	1		
CGS	M			Growth or Shrinkage Comment	ANS	1	1,000	1	1		
RSV			9.318 - 9.319	Reserved for future use by ANSI/NIST-ITL							
COR	O		9.320	CORES	SET			0	*		
CXC	M	Search/ Response		X Coordinate	N	1	5	1	1		
CYC	M		Y Coordinate	N	1	5	1	1			
CDI	O		Direction	NS	1	4	0	1		Valid Values: -179 - 180	
RPU	O		Radius of Position Uncertainty	N	1	3	0	1		Valid Values: 1 - 999	
DUY	O		Direction Uncertainty	N	1	3	0	1		Valid Values: 0 - 359	
DEL	O		9.321	DELTAS	SET			0	*		
DXC	M	Search/ Response		X Coordinate	N	1	5	1	1		
DYC	M		Y Coordinate	N	1	5	1	1			
DUP	O		Direction Up	N	1	3	0	1		Valid Values: 0 - 180	
DLF	O		Direction Left	N	1	3	0	1		Valid Values: 0 - 180	
DRT	O		Direction Right	N	1	3	0	1		Valid Values: 0 - 180	
DTP	O		Delta Type	AN	1	3	0	1		Valid Values: L, R, C, I00 - I10 or I16 or	
RPU	O		Radius of Position Uncertainty	N	1	3	0	1		Valid Values: 1 - 999	
DUU	O		Direction Uncertainty Up	N	1	3	0	1		Valid Values: 0 - 180	
DUL	O		Direction Uncertainty Left	N	1	3	0	1		Valid Values: 0 - 180	
DUR	O	Direction Uncertainty Right	N	1	3	0	1		Valid Values: 0 - 180		
CDR	O		9.322	CORE-DELTA RIDGE COUNTS	SET			0	255		
CIX	M			Core Index	AN	1	2	1	1		Valid Values: 1 - 99, L or U
DIX	M			Delta Index	AN	1	2	1	1		Valid Values: 1 - 99, L or R
MNRC	M			Min Ridge Count	N	1	2	1	1		Valid Values: 1 - 99
MXRC	O			Max Ridge Count	N	1	2	0	1		Valid Values: 1 - 99
CPR	O		9.323	CENTER POINT OF REFERENCE	SET			0	3		
CPM	M			Method	AN	1	1	1	1		Valid Values: L or 0 or 1
PXC	M			X Coordinate	N	1	5	1	1		
PYC	M			Y Coordinate	N	1	5	1	1		
RPU	O			Radius of Position Uncertainty	N	1	3	0	1		Valid Values: 1 - 999
DIS	O		9.324	DISTINCTIVE FEATURES	SET			0	99		
DIT	M			Distinctive Feature Type	A	4	11	1	1		
DFP	O			Distinctive Features Polygon	NS	11	1,188	0	1		
DFC	O			Distinctive Features Comment	ANS	1	1,000	0	1		
NCOR	D		9.325	NO CORES PRESENT	A	1	1	0	1		Valid Value: Y
NDEL	D		9.326	NO DELTAS PRESENT	A	1	1	0	1		Valid Value: Y
NDIS	D		9.327	NO DISTINCTIVE FEATURES PRESENT	A	1	1	0	1		Valid Value: Y
RSV			9.328 - 9.330	Reserved for future use by ANSI/NIST-ITL							
MIN	O		9.331	MINUTIAE	SET			0	999		
MXC	M	Search/ Response		X Coordinate	N	1	5	1	1		
MYC	M		Y Coordinate	N	1	5	1	1			
MTD	M		Theta Degrees	N	1	3	1	1		Valid Values: 0 - 180	
MTY	M		Minutia Type	A	1	1	1	1		Valid Values: E, B or X	
MRU	O		Radius of Position Uncertainty	N	1	3	0	1		Valid Values: 0 - 999	
MDU	O		Minutia Direction of Uncertainty	N	1	3	0	1		Valid Values: 0 - 359	
MRA	O		9.332	MINUTIAE RIDGE COUNT ALGORITHM	AN	5	6	0	1		Valid Values: OCTANT or EFTS7
MRC	O		9.333	MINUTIAE RIDGE COUNTS	SET			0	7,992		
MIA	M			Minutia Index A	N	1	4	1	1		Valid Values: 1 - 9999



Table J-1 Field List for Type-9 (Minutiae) Native-Mode Logical Record

Identifier	Condition	Applicable	Field No.	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Example Data	Special Characters Allowed
						Min.	Max.	Min.	Max.		
MIB	M			Minutia Index B	N	1	4	1	1		Valid Values: 1 - 9999
MIR	M			Ridge Count	N	1	2	1	1		Valid Values: 1 - 99
MRN	O			Reference Number	N	1	1	0	1		Valid Values: 1 - 8
MRS	O			Residual	N	1	1	0	1		Valid Values: 0 or 1
NMIN	D		9.334	NO MINUTIA PRESENT	A	1	1	0	1		Valid Value: Y
RCC	O		9.335	RIDGE COUNT CONFIDENCE	SET			0	7,992		
ACX	M			X Coordinate Point A	N	1	5	1	1		
ACY	M			Y Coordinate Point A	N	1	5	1	1		
BCX	M			X Coordinate Point B	N	1	5	1	1		
GCY	M			Y Coordinate Point B	N	1	5	1	1		
MORC	M			Method of Ridge Counting	A	1	1	1	1		Valid Values: A, T or M
MCV	M			Confidence Value	N	1	2	1	1		Valid Values: 0 - 99
RSV			9.336 - 9.339	Reserved for future use by ANSI/NIST-ITL							
DOT	O		9.340	DOTS	SET			0	999		
DOX	M			DOT X Coordinate	N	1	5	1	1		
DOY	M			DOT Y Coordinate	N	1	5	1	1		
DOL	O			DOT Length	N	1	2	0	1		
INR	O		9.341	INCIPIENT RIDGES	SET			0	999		
XIC	M			X Coordinate Point 1	N	1	5	1	1		
YIC	M			Y Coordinate Point 1	N	1	5	1	1		
X2C	M			X Coordinate Point 2	N	1	5	1	1		
Y2C	M			Y Coordinate Point 2	N	1	5	1	1		
CLD	O		9.342	CREASES AND LINEAR DISCONTINUITIES	SET			0	999		
XID	M			X Coordinate Point 1	N	1	5	1	1		
YID	M			Y Coordinate Point 1	N	1	5	1	1		
X2D	M			X Coordinate Point 2	N	1	5	1	1		
Y2D	M			Y Coordinate Point 2	N	1	5	1	1		
TPD	M			Type	AN	2	5	1	1		
REF	O		9.343	RIDGE EDGE FEATURES	SET			0	999		
CLX	M			X Coordinate Point	N	1	5	1	1		
CLY	M			Y Coordinate Point	N	1	5	1	1		
CLT	M			Type	A	1	1	1	1		Valid Values: P, I or D
NPOR	D		9.344	NO PORES PRESENT	A	1	1	0	1		Valid Value: Y
POR	O		9.345	PORES	SET			0	9,999		
POX	M			X Coordinate Point	N	1	5	1	1		
POY	M			Y Coordinate Point	N	1	5	1	1		
NDOT	D		9.346	NO DOTS PRESENT	A	1	1	0	1		Valid Value: Y
NINR	D		9.347	NO INCIPIENT RIDGES PRESENT	A	1	1	0	1		Valid Value: Y
NCLD	D		9.348	NO CEASES PRESENT	A	1	1	0	1		Valid Value: Y
NREF	D		9.349	NO RIDGE EDGE FEATURES PRESENT	A	1	1	0	1		Valid Value: Y
MFD	O		9.350	METHOD OF FEATURE DETECTION	SET			0	99		
FIE	M			Field	ANS	3	999	1	1		
FME	M			Method	A	3	4	1	1		
FAV	D			Algorithm Vendor	ANS	1	40	0	1		
FAL	D			Algorithm	ANS	1	40	0	1		
ESN	D			Examiner Surname	ANS	1	40	0	1		
EGN	D			Examiner Given Name	ANS	1	40	0	1		
EAF	D			Examiner Affiliation	ANS	1	99	0	1		
EMT	O			Date and Time (GMT)	AN	15	15	0	1		Use Greenwich Mean Time format
NTS	O			Notes	ANS	1	99	0	1		
COM	O	Response	9.351	COMMENT	ANS	1	126	0	1		

Table J-1 Field List for Type-9 (Minutiae) Native-Mode Logical Record

Identifier	Condition	Applicable	Field No.	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Example Data	Special Characters Allowed
						Min.	Max.	Min.	Max.		
LPM	O		9.352	LATENT PROCESSING METHOD	A	3	3	0	9		
EAA	O		9.353	EXAMINER ANALYSIS ASSESSMENT	SET			0	1		
AAV	M			Value	A	5	8	1	1		
ALN	M			Examiner Last Name	ANS	1	40	1	1		
AFN	M			Examiner First Name	ANS	1	40	1	1		
AAF	M			Examiner Affiliation	ANS	1	99	1	1		
AMT	M			Date and Time (GMT)	AN	15	15	1	1		Use Greenwich Mean Time format
ACM	O			Comment	ANS	1	200	0	1		
CXF	O		Analysis Complexity Flag	A	7	7	0	1		Valid Value: COMPLEX	
EOF	O		9.354	EVIDENCE OF FRAUD	SET			0	4		
FRA	M			Fraud Type	A	3	3	1	1		
CFD	O			Comment	ANS	1	200	0	1		
LSB	O		9.355	LATENT SUBSTRATE	SET			0	3		
CLS	M			Code	N	1	2	1	1		
OSD	O			Comment	ANS	1	1,000	0	1		
LMT	O		9.356	LATENT MATRIX	SET			0	3		
TOM	M			Code	N	1	2	1	1		
CLA	O			Comment	ANS	1	1,000	0	1		
LQI	O		9.357	LOCAL QUALITY ISSUES	SET			0	*		
LQT	M			Type	N	4	10	1	1		
LQP	M			Polygon	NS	11	1,188	1	1		
LQC	O			Comment	ANS	1	1,000	0	1		
RSV			9.358 - 9.359	Reserved for future use by ANSI/NIST-ITL							
AOC	O		9.360	AREA OF CORRESPONDENCE	SET			0	*		
CIR	M			IDC Reference	N	1	2	1	1		Valid Values: 0 - 99
AOP	M			Polygon (Closed Path)	NS	11	1,188	1	1		
CAC	O			Comment	ANS	1	1,000	0	1		
CPF	O		9.361	CORRESPONDING POINTS OR FEATURES	SET			0	*		
COL	M			Label	AN	1	3	1	1		
TOC	M			Type of Correspondence	A	1	2	1	1		
CFN	D	Response		Corresponding Field Number	N	3	3	0	1		Valid Values: 0 - 999
FOC	D			Corresponding Field Occurrence	N	1	3	0	1		
CXC	D			Corresponding X Coordinate	N	1	5	0	1		
CYC	D			Corresponding Y Coordinate	N	1	5	0	1		
COC	O			Comment	ANS	1	1,000	0	1		
ECD	O			9.362	EXAMINER COMPARISON DETERMINATION	SET			0	*	
EDC	M		IDC Reference		N	1	2	1	1		Valid Values: 0 - 255
EDE	M		Determination		AS	4	6	1	1		
WIP	M		Work in Progress		A	5	11	1	1		Valid Values: PRELIMINARY or FINAL
ELN	M		Examiner Last Name		ANS	1	40	1	1		
EFN	M		Examiner First Name		ANS	1	40	1	1		
EAF	M		Examiner Affiliation		ANS	1	99	1	1		
DTG	M		Date and Time (GMT)		AN	15	15	1	1		Use Greenwich Mean Time format
CZZ	O		Comment		ANS	1	200	0	1		
CCF	O		Complex Comparison Flag		A	7	7	0	1		Valid Value: COMPLEX
RRC	O	Response	9.363		RELATIVE ROTATION OF CORRESPONDING PRINT	SET			0	*	
RIR	M			IDC Reference	N	1	2	1	1		
ROR	M			Relative Overall Rotation	NS	1	4	1	1		Valid Values: -179 - 180
RSV			9.364 - 9.371	Reserved for future use by ANSI/NIST-ITL							

**Table J-1 Field List for Type-9 (Minutiae) Native-Mode Logical Record**

Identifier	Condition	Applicable	Field No.	Field Name	Character Type	Field Size Per Occurrence		Occurrences		Example Data	Special Characters Allowed
						Min.	Max.	Min.	Max.		
SIM	O		9.372	SKELETONIZED IMAGE	B	8	*	0	1		
RPS	O		9.373	RIDGE PATH SEGMENTS	NS	11	1,188	0	*		
RSV			9.374 - 9.399	Reserved for future use by ANSI/NIST-ITL							
RSV			9.400 - 9.900	Reserved for future use by ANSI/NIST-ITL							
ULA	O		9.901	UNIVERSAL LATENT ANNOTATION	ANS	22	300	0	1		
ANN	O		9.902	ANNOTATED INFORMATION	SET			0	*		
GMT	M			Greenwich Mean Time	ANS	15	15	1	1		
NAV	M			Processing Algorithm Name/Version	ANS	1	64	1	1		
OWN	M			Algorithm Owner	ANS	1	64	1	1		
PRO	M			Process Description	ANS	1	255	1	1		
DUI	O		9.903	DEVICE UNIQUE IDENTIFIER	ANS	13	16	0	1		
MMS	O		9.904	MAKE/MODEL/SERIAL NUMBER	SET			0	1		
MAK	M			Make	ANS	1	50	1	1		
MOD	M			Model	ANS	1	50	1	1		
SER	M			Serial Number	ANS	1	50	1	1		
RSV			9.905 - 9.999	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only							

D      Dependent upon certain conditions stated in the text  
 Applicable    Utilized by NGI on "Search" and/or "Response"  
 Under the Condition column: O = optional; M = mandatory; C = conditional, see notes  
 Under the Character Type column: A = alpha; B = binary; N = numeric; S = special characters.

## APPENDIX J REFERENCE NOTES

1. If tagged field 9.017 —APC|| is present, at least one pattern classification must be provided. Up to two additional reference classes may be provided for a maximum of three total possible patterns.
2. If no rotation has been applied, the second, third, and fourth information item positions may be empty, but the intervening us separators must remain.
3. If no second sub-image is generated, the fifth information item position may be empty.
4. Maximum of two cores reported. If only one core, the first subfield shall be terminated with the GS separator instead of the RS separator, and the second subfield shall be deleted.
5. Maximum of two deltas reported. If only one delta, the first subfield shall be terminated with the GS separator instead of the RS separator, and the second subfield shall be deleted.
6. Mandatory only for multiple-finger latent search request to specify the finger characterized herein.
7. Tagged field 9.04=\_U' indicates that a Native Mode AFIS/FBI format is being provided in this Type-9 record. The Type-9 in Table J-1 defines the ANSI/NIST-ITL standard logical record sequence for a native mode tenprint search request. "9.001:" + LEN + <GS> + "9.002:" + IDC + <GS> + "9.003:" + IMP + <GS> + "9.004:" + FMT + (<GS> + "9.013:" + AFV) + <GS> + "9.014:" + FGN + <GS> + "9.015:" + NMN + <GS> + "9.016:" + FCP + (<GS> + "9.017:" + APC) + (<GS> + "9.019:" + COF) + <GS> + "9.021:" + CRA + <GS> + "9.022:" + DLA + <GS> + "9.023:" + MAT + (<GS> + "9.024:" + CHQ) + (<GS> + "9.025:" + CLQ) + <FS>. The Type-9 in Table J-2 defines the ANSI/NIST-ITL standard logical record sequence for a remote native mode latent search request. "9.001:" + LEN + <GS> + "9.002:" + IDC + <GS> + "9.003:" + IMP + <GS> + "9.004:" + FMT + (<GS> + "9.013:" + AFV) + <GS> + "9.014:" + FGN + <GS> + "9.015:" + NMN + <GS> + "9.016:" + FCP + (<GS> + "9.017:" + APC) + (<GS> + "9.018:" + ROV) + (<GS> + "9.019:" + COF) + <GS> + "9.020:" + ORN + <GS> + "9.021:" + CRA + <GS> + "9.022:" + DLA + <GS> + "9.023:" + MAT + <FS>.
8. This field is optional if the feature vector, field 9.013, has been provided.
9. This field is required when special values for missing or omitted data is specified.

## **APPENDIX K: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-10 LOGICAL RECORDS**

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Type-10 records shall contain facial and/or SMT image data and related ASCII information pertaining to the specific image contained in this record. It shall be used to exchange both grayscale and color image data in a compressed or uncompressed form. As NGI will be accepting images as defined in the ANSI/NIST-ITL, refer to the ANSI/NIST-ITL for complete usage and descriptions of the Type-10 fields. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description.

DRAFT

## Type-10 Data Dictionary

The T-10 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

**IMT 10.003 Image Type.** *<ansi-nist:ImageCategoryCode>*

This mandatory field shall be used to indicate the type of image contained in this record and is restricted to FACE, SCAR, MARK and TATTOO for use when enrolling into NGI.

**SMT 10.040 NCIC SMT Code.** *<ansi-nist:PhysicalFeatureNCICCode>*

This field is mandatory when field 10.003, Image Type (IMT) = “SCAR”, “MARK”, or “TATTOO”. It is used to identify a general location of the captured scar, mark, tattoo, or other characteristic (including piercings) in an image. The contents of this field shall be from the NCIC code (See Annex D of the ANSI/NIST-ITL). The captured image may encompass an area larger than that specified by a single NCIC body part code for the particular image type. This situation may be accommodated by listing multiple NCIC codes, each in a separate subfield. In this case the primary code is listed first. There need not be more than one subfield.

**SMD 10.042 SMT Descriptors** *<ansi-nist:PhysicalFeatureCategoryCode>*

The SMD field is mandatory when field 10.003, Image Type (IMT) = “SCAR”, “MARK”, or “TATTOO”. SMD is used to describe the content of the SMT image to an extent greater than documented in Field 10.040: NCIC SMT code / SMT, and as such, will support the efficacy of the NGI text-based SMT search (TXTSRCH). Please reference the ANSI/NIST-ITL description of SMD for details on the definition and use of this field.

## APPENDIX L: SUMMARY TABLES

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This appendix contains summary tables that collect information otherwise dispersed through the EBTS document. Tables L-1 and L-2 cross-reference all currently used EBTS elements from their Element IDs to their Tag Numbers. The cross-references appear in two ways. Table L-1 lists the fields in Element ID order. Table L-2 lists them in Tag Number order.

In several instances, Tag Numbers shown have alpha suffixes. These suffixes are given only to make the list complete (i.e., to include subfields as well as simple elements in the list) and to aid in determination of what the parent field is in such cases. For example, the field tag 2.084A identifies this FGP as a subfield of AMP (2.084). Under no circumstance is a subfield tag to be used in formatting any legacy EBTS electronic message. Subfields do not have independent tags, either with or without an alpha suffix.

Tables L-3 and L-4 list record set requirements for each EBTS transaction type. Table L-3 lists the record set requirements for each type of submission. Table L-4 lists record set requirements for each response type. In instances where these requirements differ depending upon which submission the response is made for, several entries will be present. If fewer images are submitted, each missing image must be noted in the AMP field of the accompanying Type-2 record. The TPIS indicate that N-10 Type-4/14 or Type-9 records, respectively, are to be submitted. N is the minimum number of fingers required by AFIS for a search, and N = 2 for CJIS. Table L-5 shows the correlation of EBTS TOTs and their responses, including error responses. The columns and values for Table-L-5 were taken from the previous versions of Tables L-3 and L-4 (Tables L-3 and L-4 have been expanded to show separate values for Type-4 and Type-14, and Type-7 and Type-13 records for each TOT).

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
*tbd	2.052	REQUEST FOR RAP BACK SERVICE (Future Capability)
*tbd	2.2011	RAP BACK VERIFICATION STATUS (Future Capability)
*tbd	2.2014	RAP BACK ELIGIBILITY (Future Capability)
*tbd	2.2015	RAP BACK EXPIRATION DATE (Future Capability)
*tbd	2.202	RAP BACK RECIPIENT (Future Capability)
3DF	10.032	3D FACIAL FEATURE POINTS
ACN	2.071	ACTION TO BE TAKEN
AFM	14.024	ALTERNATE FINGERPRINT QUALITY METRIC
AGR	2.023	AGE RANGE
AKA	2.019	ALIASES
AMP	2.084	AMPUTATED OR BANDAGED
AMPCD	2.084B*	AMPUTATED OR BANDAGED CODE (AMPCD)
ANN	10.902	ANNOTATED INFORMATION
ANN	13.902	ANNOTATED INFORMATION
ANN	14.902	ANNOTATED INFORMATION
ANN	15.902	ANNOTATED INFORMATION
AOC	9.360	AREA OF CORRESPONDENCE
AOL	2.047B*	ARREST OFFENSE LITERAL (AOL)
APC	9.017	AFIS/FBI PATTERN CLASSIFICATION
ASC	10.995	ASSOCIATED CONTEXT
ASC	13.995	ASSOCIATED CONTEXT
ASC	14.995	ASSOCIATED CONTEXT
ASC	15.995	ASSOCIATED CONTEXT
ASL	2.047	ARREST SEGMENT LITERAL
ATN	2.006	ATTENTION INDICATOR
ATR	2.2032	AUDIT TRAIL RECORD
BCD	2.2073C	BIOMETRIC CAPTURE DATE
BIA	2.2031	BIOMETRIC IMAGE AVAILABLE
BIA	2.2033H*	BIOMETRIC IMAGE AVAILABLE
BID	2.2028	BIOMETRIC IMAGE DESCRIPTION
BIE	2.2061	BIOMETRIC IMAGE ENROLLMENT
BIL	2.2073	BIOMETRIC IMAGE LIST
BPX	13.012	BITS PER PIXEL
BPX	14.012	BITS PER PIXEL
BPX	15.012	BITS PER PIXEL
BSI	2.2029	BIOMETRIC SET IDENTIFIER
BSI	2.2028C*	BIOMETRIC SET IDENTIFIER
BSI	2.2032D*	BIOMETRIC SET IDENTIFIER DISSEMINATED
BSI	2.2033C*	BIOMETRIC SET IDENTIFIER
BSI	2.2073B	BIOMETRIC SET IDENTIFIER
CAN	2.064	CANDIDATE LIST
CCN	2.094	COURT CASE NUMBER
CDD	2.051A*	COURT DISPOSITION DATE (CDD)
CDN	2.051D*	COURT DISPOSITION
CDR	9.322	CORE-DELTA RIDGE COUNTS
CGA	10.011	COMPRESSION ALGORITHM
CGA	13.011	COMPRESSION ALGORITHM
CGA	14.011	COMPRESSION ALGORITHM
CGA	15.011	COMPRESSION ALGORITHM
CHQ	9.024	CHARACTERIZATION QUALITY
CIDN	2.2022	CONTRIBUTOR ASSIGNED IDENTIFICATION NUMBER
CIN	2.010	CONTRIBUTOR CASE IDENTIFIER NUMBER
CIN_ID	2.010B*	CONTRIBUTOR CASE ID (CIN_ID)
CIN_PRE	2.010A*	CONTRIBUTOR CASE PREFIX (CIN_PRE)
CIX	2.011	CONTRIBUTOR CASE IDENTIFIER EXTENSION
CLD	9.342	CREASES AND LINEAR DISCONTINUITIES
CLQ	9.025	CLASSIFIER QUALITY



**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
3DF	10.032	3D FACIAL FEATURE POINTS
ACN	2.071	ACTION TO BE TAKEN
AFM	14.024	ALTERNATE FINGERPRINT QUALITY METRIC
AGR	2.023	AGE RANGE
AKA	2.019	ALIASES
AMP	2.084	AMPUTATED OR BANDAGED
AMPCD	2.084B*	AMPUTATED OR BANDAGED CODE (AMPCD)
ANN	10.902	ANNOTATED INFORMATION
ANN	13.902	ANNOTATED INFORMATION
ANN	14.902	ANNOTATED INFORMATION
ANN	15.902	ANNOTATED INFORMATION
AOC	9.360	AREA OF CORRESPONDENCE
AOL	2.047B*	ARREST OFFENSE LITERAL (AOL)
APC	9.017	AFIS/FBI PATTERN CLASSIFICATION
ASC	10.995	ASSOCIATED CONTEXT
ASC	13.995	ASSOCIATED CONTEXT
ASC	14.995	ASSOCIATED CONTEXT
ASC	15.995	ASSOCIATED CONTEXT
ASL	2.047	ARREST SEGMENT LITERAL
ATN	2.006	ATTENTION INDICATOR
ATR	2.2032	AUDIT TRAIL RECORD
BCD	2.2073C	BIOMETRIC CAPTURE DATE
BIA	2.2031	BIOMETRIC IMAGE AVAILABLE
BIA	2.2033H*	BIOMETRIC IMAGE AVAILABLE
BID	2.2028	BIOMETRIC IMAGE DESCRIPTION
BIE	2.2061	BIOMETRIC IMAGE ENROLLMENT
BIL	2.2073	BIOMETRIC IMAGE LIST
BPX	13.012	BITS PER PIXEL
BPX	14.012	BITS PER PIXEL
BPX	15.012	BITS PER PIXEL
BSI	2.2029	BIOMETRIC SET IDENTIFIER
BSI	2.2028C*	BIOMETRIC SET IDENTIFIER
BSI	2.2032D*	BIOMETRIC SET IDENTIFIER DISSEMINATED
BSI	2.2033C*	BIOMETRIC SET IDENTIFIER
BSI	2.2073B	BIOMETRIC SET IDENTIFIER
CAN	2.064	CANDIDATE LIST
CCN	2.094	COURT CASE NUMBER
CDD	2.051A*	COURT DISPOSITION DATE (CDD)
CDN	2.051D*	COURT DISPOSITION
CDR	9.322	CORE-DELTA RIDGE COUNTS
CGA	10.011	COMPRESSION ALGORITHM
CGA	13.011	COMPRESSION ALGORITHM
CGA	14.011	COMPRESSION ALGORITHM
CGA	15.011	COMPRESSION ALGORITHM
CHQ	9.024	CHARACTERIZATION QUALITY
CIDN	2.2022	CONTRIBUTOR ASSIGNED IDENTIFICATION NUMBER
CIN	2.010	CONTRIBUTOR CASE IDENTIFIER NUMBER
CIN_ID	2.010B*	CONTRIBUTOR CASE ID (CIN_ID)
CIN_PRE	2.010A*	CONTRIBUTOR CASE PREFIX (CIN_PRE)
CIX	2.011	CONTRIBUTOR CASE IDENTIFIER EXTENSION
CLD	9.342	CREASES AND LINEAR DISCONTINUITIES
CLQ	9.025	CLASSIFIER QUALITY
CNL	2.2033	CANDIDATE INVESTIGATIVE LIST
CNT	1.003	FILE CONTENT
COF	9.019	COORDINATE OFFSETS
COL	2.051B*	COURT OFFENSE LITERAL (COL)
COM	9.351	COMMENT

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
COM	10.038	COMMENT
COM	13.020	COMMENT
COM	14.020	COMMENT
COM	15.020	COMMENT
COR	9.320	CORES
CPF	9.361	CORRESPONDING POINTS OR FEATURES
CPL	2.051C*	OTHER COURT SENTENCE PROVISION LITERAL (CPL)
CPR	9.323	CENTER POINT OF REFERENCE
CRA	9.021	CORE ATTRIBUTES
CRI	2.073	CONTROLLING AGENCY IDENTIFIER
CRN	2.085	CIVIL RECORD NUMBER
CSF	2.2006	CASCADED SEARCH FLAG (Future Capability)
CSL	2.051	COURT SEGMENT LITERAL
CSP	10.012	COLOR SPACE
CSR	2.048	CIVIL SEARCH REQUESTED INDICATOR
CST	2.061	CASE TITLE
CRA	9.021	CORE ATTRIBUTES
CRI	2.073	CONTROLLING AGENCY IDENTIFIER
CRN	2.085	CIVIL RECORD NUMBER
CSF	2.2006	CASCADED SEARCH FLAG (Future Capability)
CSL	2.051	COURT SEGMENT LITERAL
CSP	10.012	COLOR SPACE
CST	2.061	CASE TITLE
CTZ	2.021	COUNTRY OF CITIZENSHIP
DAI	1.007	DESTINATION AGENCY IDENTIFIER
DAT	1.005	DATE
DAT	10.999	IMAGE DATA
DAT	13.999	IMAGE DATA
DAT	14.999	IMAGE DATA
DAT	15.999	IMAGE DATA
DAT	2.2032B*	DATE OF DISSEMINATION
DATUM_ID	2.2027	GEOGRAPHIC COORDINATE DATUM (Future Capability)
DCS	1.015	DIRECTORY OF CHARACTER SETS
DEL	9.321	DELTAS
DIS	9.324	DISTINCTIVE FEATURES
DIST	10.018	DISTORTION
DLA	9.022	DELTA ATTRIBUTES
DMM	10.030	DEVICE MONITORING MODE
DMM	14.030	DEVICE MONITORING MODE
DMM	15.030	DEVICE MONITORING MODE
DNAC	2.2018	DNA IN CODIS FLAG (Future Capability)
DNAF	2.2016	DNA FLAG (Future Capability)
DOA	2.045	DATE OF ARREST
DOB	2.022	DATE OF BIRTH
DOM	1.013	DOMAIN NAME
DOO	2.047A*	DATE OF OFFENSE (DOO)
DORBE	2.2069A	DATE OF RAP BACK EVENT
DORI	2.2017	DNA LOCATION (Future Capability)
DOT	9.340	DOTS
DPR	2.038	DATE PRINTED
DSPSET	2.2053	DISPOSITION SET
DTR	2.2068	RAP BACK EXPIRATION DATE RANGE
DTX	9.179	OTHER FEATURE SETS – CONTACT INFORMATION AND DESCRIPTIVE TEXT
DUI	10.903	DEVICE UNIQUE IDENTIFIER
DUI	13.903	DEVICE UNIQUE IDENTIFIER
DUI	14.903	DEVICE UNIQUE IDENTIFIER
DUI	15.903	DEVICE UNIQUE IDENTIFIER

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
EAA	9.353	EXAMINER ANALYSIS ASSESSMENT
EAD	2.039	EMPLOYER AND ADDRESS
ECD	9.362	EXAMINER COMPARISON DETERMINATION
EID	2.049	EMPLOYEE IDENTIFICATION NUMBER
EOF	9.354	EVIDENCE OF FRAUD
ERS	2.075	ELECTRONIC RAP SHEET
ESI	2.2037	EXTERNAL SUBJECT IDENTIFIER
EVI	2.2035	EVENT IDENTIFIER
EVT	2.2049	EVENT LIST
EXP	2.080	RESPONSE EXPLANATION
EYE	2.031	COLOR EYES
FAP	14.031	SUBJECT ACQUISITION PROFILE – FINGERPRINT
FBI	2.014	FBI NUMBER
FBI/UCN	2.2028A*	FBI NUMBER/UCN
FCD	14.005	FINGERPRINT CAPTURE DATE
FCP	9.016	FINGERPRINT CHARACTERIZATION PROCESS
FEC	10.033	FEATURE CONTOURS
FFN	2.003	FBI FILE NUMBER
FFP	10.029	2D FACIAL FEATURE POINTS
FGN	9.014	FINGER NUMBER
FGP	2.074	FINGER POSITION
FGP	7.004	FINGER POSITION
FGP	13.013	FINGER/PALM POSITION
FGP	14.013	FINGER POSITION
FGP	15.013	FRICTION RIDGE POSITION
FGP	2.034A*	FINGER NUMBER (FGP)
FGP	2.084A*	FINGER NUMBER (FGP)
FGP	2.091A*	FINGER NUMBER (FGP)
FGP	2.092A*	FINGER NUMBER (FGP)
FGP	2.2030A*	FRICTION RIDGE GENERALIZED POSITION
FGP	2.2033E*	FRICTION RIDGE GENERALIZED POSITION
FIC	2.2030B*	FINGER IMAGE CODE
FIP	10.014	FACE IMAGE BOUNDING BOX COORDINATES IN FULL IMAGE
FIU	2.072	FINGERPRINT IMAGE(S) UPDATED
FMT	9.004	MINUTIAE FORMAT
FNR	2.057	FINGER NUMBER(S) REQUESTED
FNR	2.2028D*	FINGER NUMBER REQUESTED
FNR	2.2032F*	FRICTION RIDGE POSITION REQUESTED
FPC	2.033	NCIC FINGERPRINT CLASSIFICATION
FPFI	10.015	FACE IMAGE PATH COORDINATES IN FULL IMAGE
FPP	9.302	FINGER, PALM, PLANTAR POSITION
FQM	9.316	FRICTION RIDGE QUALITY METRIC
FSI	2.2045	FOREIGN SUBJECTS OF INTEREST
FSP	9.303	FEATURE SET PROFILE
GCA	7.008	GRAYSCALE COMPRESSION ALGORITHM
GEO	2.044	GEOGRAPHICAL AREA OF SEARCH
GEO	10.998	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
GEO	13.998	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
GEO	14.998	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
GEO	15.998	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
GEO_CORD	2.2026	GEOGRAPHIC COORDINATE LOCATION (Future Capability)
GEO_TIME	2.2025	GEOGRAPHIC COORDINATE DATE TIME STAMP (Future Capability)
GMT	1.014	GREENWICH MEAN TIME
HAI	2.032	HAIR COLOR
HAS	10.996	HASH
HAS	13.996	HASH
HAS	14.996	HASH

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
HAS	15.996	HASH
HGT	2.027	HEIGHT
HLL	7.006	HORIZONTAL LINE LENGTH
HLL	10.006	HORIZONTAL LINE LENGTH
HLL	13.006	HORIZONTAL LINE LENGTH
HLL	14.006	HORIZONTAL LINE LENGTH
HLL	15.006	HORIZONTAL LINE LENGTH
HNOTI	2.2051	HIT NOTIFICATION INDICATOR
HPS	13.009	HORIZONTAL PIXEL SCALE
HPS	14.009	HORIZONTAL PIXEL SCALE
HPS	15.009	HORIZONTAL PIXEL SCALE
HTI	2.2024	HIT TYPE INDICATOR
HTR	2.028	HEIGHT RANGE
IAQ	2.2042	
ICO	2.056	IDENTIFICATION COMMENTS
IDC	2.002	INFORMATION DESIGNATION CHARACTER
IDC	7.002	INFORMATION DESIGNATION CHARACTER
IDC	9.002	INFORMATION DESIGNATION CHARACTER
IDC	10.002	INFORMATION DESIGNATION CHARACTER
IDC	13.002	INFORMATION DESIGNATION CHARACTER
IDC	14.002	INFORMATION DESIGNATION CHARACTER
IDC	15.002	INFORMATION DESIGNATION CHARACTER
IDC	2.2033J*	INFORMATION DESIGNATION CHARACTER
IFS	2.2021	IDENTIFICATION FIREARMS SALES (Future Capability)
IIR	2.2012	IRIS IMAGES REQUESTED (Future Capability)
IMA	2.067	IMAGE CAPTURE EQUIPMENT
IMG	7.009	IMAGE DATA
IMP	7.003	IMPRESSION TYPE
IMP	9.003	IMPRESSION TYPE
IMP	13.003	IMPRESSION TYPE
IMP	14.003	IMPRESSION TYPE
IMP	15.003	IMPRESSION TYPE
IMT	2.062	IMAGE TYPE
IMT	10.003	IMAGE TYPE
IMT	2.2028B*	IMAGE TYPE
IMT	2.2032E*	IMAGE TYPE DISSEMINATED
IMT	2.2033D*	IMAGE TYPE
IMT	2.2073D	IMAGE TYPE
INR	9.341	INCIPIENT RIDGES
ISC	14.200	IMAGE SOURCE CODE
ISC	15.200	IMAGE SOURCE CODE
ISR	7.005	IMAGE SCANNING RESOLUTION
ITVFI	2.2043	
ITX	10.044	IMAGE TRANSFORM
IVFI	2.2060	
LAF	10.019	LIGHTING ARTIFACTS
LATD	2.2026A*	LATITUDE DEGREE (Future Capability)
LATM	2.2026B*	LATITUDE MINUTE (Future Capability)
LATS	2.2026C*	LATITUDE SECOND (Future Capability)
LCD	13.005	LATENT CAPTURE DATE
LEN	1.001	LOGICAL RECORD LENGTH
LEN	2.001	LOGICAL RECORD LENGTH
LEN	7.001	LOGICAL RECORD LENGTH
LEN	9.001	LOGICAL RECORD LENGTH
LEN	10.001	LOGICAL RECORD LENGTH
LEN	13.001	LOGICAL RECORD LENGTH
LEN	14.001	LOGICAL RECORD LENGTH

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
LEN	15.001	LOGICAL RECORD LENGTH
LMT	9.356	LATENT MATRIX
LOND	2.2026D*	LONGITUDE DEGREE (Future Capability)
LONM	2.2026E*	LONGITUDE MINUTE (Future Capability)
LONS	2.2026F*	LONGITUDE SECOND (Future Capability)
LPM	9.352	LATENT PROCESSING METHOD
LQI	9.357	LOCAL QUALITY ISSUES
LQM	13.024	LATENT QUALITY METRIC
LSB	9.355	LATENT SUBSTRATE
MAI	2.2052	MAINTENANCE ACTION INDICATOR
MAK	2.067A*	ORIGINATING FINGERPRINT READING SYSTEM MAKE (MAK)
MAT	9.023	MINUTIAE AND RIDGE COUNT DATA
MFD	9.350	METHOD OF FEATURE DETECTION
MIL	2.042	MILITARY CODE
MIN	9.331	MINUTIAE
MMS	10.904	MAKE/MODEL/SERIAL NUMBER
MMS	13.904	MAKE/MODEL/SERIAL NUMBER
MMS	14.904	MAKE/MODEL/SERIAL NUMBER
MMS	15.904	MAKE/MODEL/SERIAL NUMBER
MNU	2.017	MISCELLANEOUS IDENTIFICATION NUMBER
MODL	2.067B*	ORIGINATING FINGERPRINT READING SYSTEM MODEL (MODL)
MRA	9.332	MINUTIAE RIDGE COUNT ALGORITHM
MRC	9.333	MINUTIAE RIDGE COUNTS
MSC	2.089	MATCHSCORE
MSC	2.2033G*	MATCH SCORE
MSG	2.060	STATUS/ERROR MESSAGE
NAM	2.018	NAME
NAM	2.064B*	NAME (NAM)
NAM	2.2033B*	MASTER NAME
NAM1	2.2001	NAME-ONE (Future Capability)
NAM2	2.2002	NAME-TWO (Future Capability)
NAM3	2.2003	NAME-THREE (Future Capability)
NAM4	2.2004	NAME-FOUR (Future Capability)
NAM5	2.2005	NAME-FIVE (Future Capability)
NCLD	9.348	NO CEASES PRESENT
NCOR	9.325	NO CORES PRESENT
NCR	2.079	NUMBER OF CANDIDATES' IMAGES RETURNED
NDEL	9.326	NO DELTAS PRESENT
NDIS	9.327	NO DISTINCTIVE FEATURES PRESENT
NDOT	9.346	NO DOTS PRESENT
NDR	2.098	NAME OF DESIGNATED REPOSITORY
NDR	2.2033I*	NAME OF DESIGNATED REPOSITORY
NINR	9.347	NO INCIPIENT RIDGES PRESENT
NIR	2.201	NUMBER OF IMAGES REQUESTED
NMIN	9.334	NO MINUTIA PRESENT
NMN	9.015	NUMBER OF MINUTIAE
NOT	2.088	NOTE FIELD
NOT	2.2033K*	NOTE FIELD
NPOR	9.344	NO PORES PRESENT
NQM	14.022	NIST QUALITY METRIC
NREF	9.349	NO RIDGE EDGE FEATURES PRESENT
NSR	1.011	NATIVE SCANNING RESOLUTION
NTR	1.012	NOMINAL TRANSMITTING RESOLUTION
OCA	2.009	ORIGINATING AGENCY CASE NUMBER
OCC	10.045	OCCLUSIONS
OCP	2.040	OCCUPATION
ODD	9.176	OTHER FEATURE SET OWNER OR DEVELOPER

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
OFC	2.053	OFFENSE CATEGORY
ORI	1.008	ORIGINATING AGENCY IDENTIFIER
ORI	2.2032A*	ORIGINATING AGENCY IDENTIFIER
ORN	9.020	ORIENTATION UNCERTAINTY
ORT	9.301	ORIENTATION
PAG	9.177	OTHER FEATURE SETS - PROCESSING ALGORITHM
PAS	10.023	PHOTO ACQUISITION SOURCE
PAT	2.034	PATTERN LEVEL CLASSIFICATIONS
PAT	9.307	PATTERN CLASSIFICATION
PATCL	2.034B*	PATTERN CLASSIFICATION CODE (PATCL)
PCD	15.005	PALMPRINT CAPTURE DATE
PEN	2.078	PENETRATION QUERY RESPONSE
PGS	9.317	POSSIBLE GROWTH OR SHRINKAGE
PHD	10.005	PHOTO DATE
PHT	2.036	PHOTO INDICATOR AVAILABLE
PLR	9.315	POSSIBLE LATERAL REVERSAL
POA	10.021	POSE OFFSET ANGLE
POB	2.020	PLACE OF BIRTH
POC	2.2009	POINT OF CONTACT
POR	9.345	PORES
POS	2.2036	SUBJECT POSE
POS	10.020	SUBJECT POSE
PPC	13.015	PRINT POSITION COORDINATES
PPC	14.015	PRINT POSITION COORDINATES
PPD	2.2030	PRINT POSITION DESCRIPTOR
PPD	14.014	PRINT POSITION DESCRIPTORS
PPD	2.2028E*	PRINT POSITION DESCRIPTOR
PPD	2.2032G*	PRINT POSITION DESCRIPTION
PPD	2.2033F*	PRINT POSITION DESCRIPTOR
PQM	15.024	PALMPRINT QUALITY METRIC
PRI	2.076	PRIORITY
PRY	1.006	TRANSACTION PRIORITY
PXS	10.022	PHOTO DESCRIPTION
RAC	2.025	RACE
RAP	2.070	REQUEST FOR ELECTRONIC RAP SHEET
RAR	2.2047	RETURN ALL RECORDS INDICATOR
RBATN	2.2070	RAP BACK ATTENTION INDICATOR
RBC	2.2065	RAP BACK CATEGORY
RBDI	2.2067	RAP BACK DISCLOSURE INDICATOR
RBEI	2.2069C	RAP BACK EVENT INFORMATION
RBFN	2.2064A	RAP BACK FIELD NAME
RBFT	2.2064B	RAP BACK FIELD TEXT
RBMI	2.2039	RAP BACK MAINTENANCE IDENTIFIER
RBNF	2.2062	RAP BACK ACTIVITY NOTIFICATION
RBNI	2.2041	RAP BACK ACTIVITY NOTIFICATION IDENTIFIER
RBOO	2.2063	RAP BACK OPT OUT IN-STATE INDICATOR
RBR	2.2020	RAP BACK RECIPIENT
RBSD	2.2054	RAP BACK SUBSCRIPTION DATE
RBSI	2.2048	RAP BACK SUBSCRIPTION IDENTIFIER
RBSL	2.2050	RAP BACK SUBSCRIPTION LIST
RBST	2.2071	RAP BACK SUBSCRIPTION TERM
RBT	2.2040	RAP BACK TRIGGER
RBTD	2.2049	RAP BACK TERM DATE
RBTED	2.2069	RAP BACK TRIGGERING EVENT DETAILS
RBUD	2.2064	RAP BACK USER DEFINED
RBXD	2.2015	RAP BACK EXPIRATION DATE
RCC	9.335	RIDGE COUNT CONFIDENCE

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
RCD1	2.091	RIDGE CORE DELTA ONE FOR SUBPATTERN CLASSIFICATION
RCD2	2.092	RIDGE CORE DELTA TWO FOR SUBPATTERN CLASSIFICATION
RCN1	2.091B*	RIDGE COUNT NUMBER 1 (RCN1)
RCN2	2.092B*	RIDGE COUNT NUMBER 2 (RCN2)
REC	2.082	RESPONSE CODE
REF	9.343	RIDGE EDGE FEATURES
RES	2.041	RESIDENCE OF PERSON FINGERPRINTED
RET	2.005	RETENTION CODE
RFF	9.311	RIDGE FLOW MAP FORMAT
RFM	9.310	RIDGE FLOW MAP
RFP	2.037	REASON FINGERPRINTED
RFR	2.095	REQUEST FEATURES RECORD
RISCF	2.2044	RISC ENROLLMENT INDICATOR
ROI	9.300	REGION OF INTEREST
ROV	9.018	REGION OF VALUE
RPR	2.096	REQUEST PHOTO RECORD
RPS	9.373	RIDGE PATH SEGMENTS
RQF	9.309	RIDGE QUALITY MAP FORMAT
RQM	9.308	RIDGE QUALITY MAP
RSC	2.2102	REASON SUPERVISION CANCELLED
RSC	2.2103	REASON SUPERVISION CANCELLED
RSR	2.065	REPOSITORY STATISTICS RESPONSE
RSV	9.026 - 9.030	RESERVED FOR FBI IAFIS FEATURE SET
RSV	9.031 - 9.055	RESERVED FOR COGENT FEATURE SET
RSV	9.056 - 9.070	RESERVED FOR MOTOROLA FEATURE SET
RSV	9.071 - 9.099	RESERVED FOR SAGEM MORPPHO FEATURE SET
RSV	9.100 - 9.125	RESERVED FOR NEC FEATURE SET
RSV	9.125 - 9.150	RESERVED FOR MI-378 FIELDS
RSV	9.151 - 9.175	RESERVED FOR IDENTIX FEATURE SET
RSV	9.180 - 9.225	OTHER FEATURE SET DEFINED FIELDS
RSV	9.226 - 9.299	Reserved for future use by ANSI/NIST-ITL
RSV	9.304 - 9.306	Reserved for future use by ANSI/NIST-ITL
RSV	9.318 - 9.319	Reserved for future use by ANSI/NIST-ITL
RSV	9.328 - 9.330	Reserved for future use by ANSI/NIST-ITL
RSV	9.336 - 9.339	Reserved for future use by ANSI/NIST-ITL
RSV	9.358 - 9.359	Reserved for future use by ANSI/NIST-ITL
RSV	9.363 - 9.371	Reserved for future use by ANSI/NIST-ITL
RSV	9.374 - 9.399	Reserved for future use by ANSI/NIST-ITL
RSV	10.034 – 10.037	Reserved for future use by ANSI/NIST-ITL

**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
RSV	10.046 - 10.199	Reserved for future use by ANSI/NIST-ITL
RSV	10.901	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	10.905 - 10.994	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	13.025 - 13.199	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	13.901	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	13.905 - 13.994	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	14.032- 14.199	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	14.901	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	14.905 - 14.994	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	15.031 - 15.199	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	15.901	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RSV	15.905 - 15.994	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
RWF	9.313	RIDGE WAVELENGTH MAP FORMAT
RWM	9.312	RIDGE WAVELENGTH MAP
SAN	2.099	STATE ARREST NUMBER
SAP	10.013	SUBJECT ACQUISITION PROFILE
SCNA	2.086	LEGACY UNSOLVED LATENT NUMBER
SCO	2.007	SEND COPY TO
SDOB	2.2007	SUBMITTED DATE OF BIRTH
SEAL	2.2019	SEAL ARREST FLAG (Future Capability)
SEC	10.027	SUBJECT EYE COLOR
SED	2.2100	CUSTODY OR SUPERVISORY END DATE
SEG	14.021	FINGERPRINT SEGMENT POSITION(S)
SERNO	2.067C*	ORIGINATING FINGERPRINT READING SYSTEM SERIAL NUMBER (SERNO)
SEX	2.024	SEX
SHC	10.028	SUBJECT HAIR COLOR
SHPS	10.016	SCAN HORIZONTAL PIXEL SCALE
SHPS	13.016	SCANNED HORIZONTAL PIXEL SCALE
SHPS	14.016	SCAN HOR PIXEL SCALE
SHPS	15.016	SCAN HOR PIXEL SCALE
SID	2.015	STATE IDENTIFICATION NUMBER
SI	2.2073A	SUBJECT IDENTIFIER
SII	2.2023	SUPPLEMENTARY IDENTITY INFORMATION
SIM	9.372	SKELETONIZED IMAGE
SLC	10.008	SCALE UNITS
SLC	13.008	SCALE UNITS
SLC	14.008	SCALE UNITS
SLC	15.008	SCALE UNITS
SLE	2.055	CUSTODY OR SUPERVISORY STATUS LITERAL
SMD	2.2058	SMT DESCRIPTORS
SMD	10.042	SMT DESCRIPTORS
SMS	2.2055	SCAR/MARK/TATTOO SIZE
SMS	10.041	SCAR/MARK/TATTOO SIZE
SMT	2.026	SCARS, MARKS, AND TATTOOS
SMT	10.040	NCIC DESIGNATION CODE
SNAM	2.2008	SUBMITTED NAME
SOC	2.016	SOCIAL SECURITY ACCOUNT NUMBER
SOD	9.178	OTHER VENDOR SETS - SYSTEM OR DEVICE
SOR	10.997	SOURCE REPRESENTATION



**Table L-1 Complete Element Cross-Reference List by Element ID**

<b>Element ID</b>	<b>EBTS Tag Number</b>	<b>Element Name</b>
SOR	13.997	SOURCE REPRESENTATION
SOR	14.997	SOURCE REPRESENTATION
SOR	15.997	SOURCE REPRESENTATION
SPA	10.025	SUBJECT POSE ANGLES
SPD	13.014	SEARCH POSITION DESCRIPTORS
SQM	14.023	SEGMENTATION QUALITY METRIC
SQS	10.024	SUBJECT QUALITY SCORES
SRA	2.2104	SUPERVISED RELEASE DATE
SRC	10.004	SOURCE AGENCY/ORI
SRC	13.004	SOURCE AGENCY/ORI
SRC	14.004	SOURCE AGENCY/ORI
SRC	15.004	SOURCE AGENCY/ORI
SRF	2.059	SEARCH RESULTS FINDINGS
SSD	2.054	CUSTODY OR SUPERVISORY STATUS - START DATE
SST	2.2101	SUPERVISED STATUS TYPE
STT	2.2103	SUPERVISION TRANSFERRED TO
SVPS	10.017	SCAN VERTICAL PIXEL SCALE
SVPS	13.017	SCANNED VERTICAL PIXEL SCALE
SVPS	14.017	SCAN VERT PIXEL SCALE
SVPS	15.017	SCAN VERT PIXEL SCALE
SXS	10.026	SUBJECT FACIAL DESCRIPTION
T10	10.039	TYPE-10 REFERENCE NUMBER
TAA	2.087	TREAT AS ADULT
TCL	2.2059	TATOO COLOR
TCN	1.009	TRANSACTION CONTROL NUMBER
TCR	1.010	TRANSACTION CONTROL REFERENCE
THPS	10.009	TRANSMITTED HORIZONTAL PIXEL SCALE
TLI	2.2046	TIER LEVEL INDICATOR
TMC	10.031	TIERED MARKUP COLLECTION
TOT	1.004	TYPE OF TRANSACTION
TOT	2.2032C*	TOT OF DISSEMINATION
TRV	9.314	TONAL REVERSAL
TSR	2.043	TYPE OF SEARCH REQUESTED
TVPS	10.010	TRANSMITTED VERTICAL PIXEL SCALE
UCN	2.064A*	UNIVERSAL CONTROL (UCN) NUMBER
UCN	2.2033A*	FBI NUMBER/UCN
UDF	10.200-10.900	USER-DEFINED FIELDS
UDF	13.200-13.900	USER-DEFINED FIELDS
UDF	14.201-14.900	USER-DEFINED FIELDS
UDF	15.201-15.900	USER-DEFINED FIELDS
ULF	2.083	UNSOLVED LATENT FILE
ULR	2.2034	UNSOLVED LATENT RETAINED
VER	1.002	VERSION
VLL	7.007	VERTICAL LINE LENGTH
VLL	10.007	VERTICAL LINE LENGTH
VLL	13.007	VERTICAL LINE LENGTH
VLL	14.007	VERTICAL LINE LENGTH
VLL	15.007	VERTICAL LINE LENGTH
VPS	13.010	VERTICAL PIXEL SCALE
VPS	14.010	VERTICAL PIXEL SCALE
VPS	15.010	VERTICAL PIXEL SCALE
WGT	2.029	WEIGHT
WTR	2.030	WEIGHT RANGE

**Table L-1 Complete Element Cross-Reference List by Element ID**

Element ID	EBTS Tag Number	Element Name
XRS	2.2038	

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
1.001	LEN	LOGICAL RECORD LENGTH
1.002	VER	VERSION
1.003	CNT	FILE CONTENT
1.004	TOT	TYPE OF TRANSACTION
1.005	DAT	DATE
1.006	PRY	TRANSACTION PRIORITY
1.007	DAI	DESTINATION AGENCY IDENTIFIER
1.008	ORI	ORIGINATING AGENCY IDENTIFIER
1.009	TCN	TRANSACTION CONTROL NUMBER
1.010	TCR	TRANSACTION CONTROL REFERENCE
1.011	NSR	NATIVE SCANNING RESOLUTION
1.012	NTR	NOMINAL TRANSMITTING RESOLUTION
1.013	DOM	DOMAIN NAME
1.014	GMT	GREENWICH MEAN TIME
1.015	DCS	DIRECTORY OF CHARACTER SETS
2.001	LEN	LOGICAL RECORD LENGTH
2.002	IDC	INFORMATION DESIGNATION CHARACTER
2.003	FFN	FBI FILE NUMBER
2.005	RET	RETENTION CODE
2.006	ATN	ATTENTION INDICATOR
2.007	SCO	SEND COPY TO
2.009	OCA	ORIGINATING AGENCY CASE NUMBER
2.010	CIN	CONTRIBUTOR CASE IDENTIFIER NUMBER
2.010A*	CIN_PRE	CONTRIBUTOR CASE PREFIX (CIN_PRE)
2.010B*	CIN_ID	CONTRIBUTOR CASE ID (CIN_ID)
2.011	CIX	CONTRIBUTOR CASE IDENTIFIER EXTENSION
2.014	FBI	FBI NUMBER
2.015	SID	STATE IDENTIFICATION NUMBER
2.016	SOC	SOCIAL SECURITY ACCOUNT NUMBER
2.017	MNU	MISCELLANEOUS IDENTIFICATION NUMBER
2.018	NAM	NAME
2.019	AKA	ALIASES
2.020	POB	PLACE OF BIRTH
2.021	CTZ	COUNTRY OF CITIZENSHIP
2.022	DOB	DATE OF BIRTH
2.023	AGR	AGE RANGE
2.024	SEX	SEX
2.025	RAC	RACE
2.026	SMT	SCARS, MARKS, AND TATTOOS
2.027	HGT	HEIGHT
2.028	HTR	HEIGHT RANGE
2.029	WGT	WEIGHT
2.030	WTR	WEIGHT RANGE
2.031	EYE	COLOR EYES
2.032	HAI	HAIR COLOR
2.033	FPC	NCIC FINGERPRINT CLASSIFICATION
2.034	PAT	PATTERN LEVEL CLASSIFICATIONS
2.034A*	FGP	FINGER NUMBER (FGP)
2.034B*	PATCL	PATTERN CLASSIFICATION CODE (PATCL)
2.036	PHT	PHOTO INDICATOR AVILABLE
2.037	RFP	REASON FINGERPRINTED
2.038	DPR	DATE PRINTED
2.039	EAD	EMPLOYER AND ADDRESS
2.040	OCP	OCCUPATION
2.041	RES	RESIDENCE OF PERSON FINGERPRINTED
2.042	MIL	MILITARY CODE
2.043	TSR	TYPE OF SEARCH REQUESTED

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
2.044	GEO	GEOGRAPHICAL AREA OF SEARCH
2.045	DOA	DATE OF ARREST
2.047	ASL	ARREST SEGMENT LITERAL
2.047A*	DOO	DATE OF OFFENSE (DOO)
2.047B*	AOL	ARREST OFFENSE LITERAL (AOL)
2.049	EID	EMPLOYEE IDENTIFICATION NUMBER
2.051	CSL	COURT SEGMENT LITERAL
2.051A*	CDD	COURT DISPOSITION DATE (CDD)
2.051B*	COL	COURT OFFENSE LITERAL (COL)
2.051C*	CPL	OTHER COURT SENTENCE PROVISION LITERAL (CPL)
2.051D*	CDN	COURT DISPOSITION
2.053	OFC	OFFENSE CATEGORY
2.054	SSD	CUSTODY OR SUPERVISORY STATUS - START DATE
2.055	SLE	CUSTODY OR SUPERVISORY STATUS LITERAL
2.056	ICO	IDENTIFICATION COMMENTS
2.057	FNR	FINGER NUMBER(S) REQUESTED
2.059	SRF	SEARCH RESULTS FINDINGS
2.060	MSG	STATUS/ERROR MESSAGE
2.061	CST	CASE TITLE
2.062	IMT	IMAGE TYPE
2.064	CAN	CANDIDATE LIST
2.064A*	UCN	UNIVERSAL CONTROL (UCN) NUMBER
2.064B*	NAM	NAME (NAM)
2.065	RSR	REPOSITORY STATISTICS RESPONSE
2.067	IMA	IMAGE CAPTURE EQUIPMENT
2.067A*	MAK	ORIGINATING FINGERPRINT READING SYSTEM MAKE (MAK)
2.067B*	MODL	ORIGINATING FINGERPRINT READING SYSTEM MODEL (MODL)
2.067C*	SERNO	ORIGINATING FINGERPRINT READING SYSTEM SERIAL NUMBER (SERNO)
2.070	RAP	REQUEST FOR ELECTRONIC RAP SHEET
2.071	ACN	ACTION TO BE TAKEN
2.072	FIU	FINGERPRINT IMAGE(S) UPDATED
2.073	CRI	CONTROLLING AGENCY IDENTIFIER
2.074	FGP	FINGER POSITION
2.075	ERS	ELECTRONIC RAP SHEET
2.076	PRI	PRIORITY
2.078	PEN	PENETRATION QUERY RESPONSE
2.079	NCR	NUMBER OF CANDIDATES' IMAGES RETURNED
2.080	EXP	RESPONSE EXPLANATION
2.082	REC	RESPONSE CODE
2.083	ULF	UNSOLVED LATENT FILE
2.084	AMP	AMPUTATED OR BANDAGED
2.084A*	FGP	FINGER NUMBER (FGP)
2.084B*	AMPCD	AMPUTATED OR BANDAGED CODE (AMPCD)
2.085	CRN	CIVIL RECORD NUMBER
2.086	SCNA	LEGACY UNSOLVED LATENT NUMBER
2.087	TAA	TREAT AS ADULT
2.088	NOT	NOTE FIELD
2.089	MSC	MATCHSCORE
2.091	RCD1	RIDGE CORE DELTA ONE FOR SUBPATTERN CLASSIFICATION
2.091A*	FGP	FINGER NUMBER (FGP)
2.091B*	RCN1	RIDGE COUNT NUMBER 1 (RCN1)
2.092	RCD2	RIDGE CORE DELTA TWO FOR SUBPATTERN CLASSIFICATION
2.092A*	FGP	FINGER NUMBER (FGP)
2.092B*	RCN2	RIDGE COUNT NUMBER 2 (RCN2)
2.094	CCN	COURT CASE NUMBER (Future Capability)
2.095	RFR	REQUEST FEATURES RECORD
2.096	RPR	REQUEST PHOTO RECORD

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
2.098	NDR	NAME OF DESIGNATED REPOSITORY
2.099	SAN	STATE ARREST NUMBER
2.2001	NAM1	NAME-ONE (Future Capability)
2.2002	NAM2	NAME-TWO (Future Capability)
2.2003	NAM3	NAME-THREE (Future Capability)
2.2004	NAM4	NAME-FOUR (Future Capability)
2.2005	NAM5	NAME-FIVE (Future Capability)
2.2006	CSF	CASCADED SEARCH FLAG (Future Capability)
2.2007	SDOB	SUBMITTED DATE OF BIRTH
2.2008	SNAM	SUBMITTED NAME
2.2009	POC	POINT OF CONTACT
2.2010	NIR	NUMBER OF IMAGES REQUESTED
2.2012	IIR	IRIS IMAGES REQUESTED (Future Capability)
2.2015	RBXD	RAP BACK EXPIRATION DATE
2.2016	DNAF	DNA FLAG (Future Capability)
2.2017	DORI	DNA LOCATION (Future Capability)
2.2018	DNAC	DNA IN CODIS FLAG (Future Capability)
2.2019	SEAL	SEAL ARREST FLAG (Future Capability)
2.2020	RBR	RAP BACK RECIPIENT
2.2021	IFS	IDENTIFICATION FIREARMS SALES (Future Capability)
2.2022	CIDN	CONTRIBUTOR ASSIGNED IDENTIFICATION NUMBER
2.2023	SII	SUPPLEMENTARY IDENTITY INFORMATION
2.2024	HTI	HIT TYPE INDICATOR
2.2025	GEO_TIME	GEOGRAPHIC COORDINATE DATE TIME STAMP (Future Capability)
2.2026	GEO_CORD	GEOGRAPHIC COORDINATE LOCATION (Future Capability)
2.2026A*	LATD	LATITUDE DEGREE (Future Capability)
2.2026B*	LATM	LATITUDE MINUTE (Future Capability)
2.2026C*	LATS	LATITUDE SECOND (Future Capability)
2.2026D*	LOND	LONGITUDE DEGREE (Future Capability)
2.2026E*	LONM	LONGITUDE MINUTE (Future Capability)
2.2026F*	LONS	LONGITUDE SECOND (Future Capability)
2.2027	DATUM_ID	GEOGRAPHIC COORDINATE DATUM (Future Capability)
2.2028	BID	BIOMETRIC IMAGE DESCRIPTION
2.2028A*	FBI/UCN	FBI NUMBER/UCN
2.2028B*	IMT	IMAGE TYPE
2.2028C*	BSI	BIOMETRIC SET IDENTIFIER
2.2028D*	FNR	FINGER NUMBER REQUESTED
2.2028E*	PPD	PRINT POSITION DESCRIPTOR
2.2029	BSI	BIOMETRIC SET IDENTIFIER
2.2030	PPD	PRINT POSITION DESCRIPTOR
2.2030A*	FGP	FRICTION RIDGE GENERALIZED POSITION
2.2030B*	FIC	FINGER IMAGE CODE
2.2031	BIA	BIOMETRIC IMAGE AVAILABLE
2.2032	ATR	AUDIT TRAIL RECORD
2.2032A*	ORI	ORIGINATING AGENCY IDENTIFIER
2.2032B*	DAT	DATE OF DISSEMINATION
2.2032C*	TOT	TOT OF DISSEMINATION
2.2032D*	BSI	BIOMETRIC SET IDENTIFIER DISSEMINATED
2.2032E*	IMT	IMAGE TYPE DISSEMINATED
2.2032F*	FNR	FRICTION RIDGE POSITION REQUESTED
2.2032G*	PPD	PRINT POSITION DESCRIPTION
2.2033	CNL	CANDIDATE INVESTIGATIVE LIST
2.2033A*	UCN	FBI NUMBER/UCN
2.2033B*	NAM	MASTER NAME
2.2033C*	BSI	BIOMETRIC SET IDENTIFIER
2.2033D*	IMT	IMAGE TYPE
2.2033E*	FGP	FRICTION RIDGE GENERALIZED POSITION

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
2.2033F*	PPD	PRINT POSITION DESCRIPTOR
2.2033G*	MSC	MATCH SCORE
2.2033H*	BIA	BIOMETRIC IMAGE AVAILABLE
2.2033I*	NDR	NAME OF DESIGNATED REPOSITORY
2.2033J*	IDC	INFORMATION DESIGNATION CHARACTER
2.2033K*	NOT	NOTE FIELD
2.2034	ULR	UNSOLVED LATENT RETAINED
2.2035	EVI	EVENT IDENTIFIER
2.2036	POS	SUBJECT POSE
2.2037	ESI	EXTERNAL SUBJECT IDENTIFIER
2.2038	XRS	
2.2039	RBMI	RAP BACK MAINTENANCE IDENTIFIER
2.2040	RBT	RAP BACK TRIGGER
2.2041	RBNI	RAP BACK ACTIVITY NOTIFICATION IDENTIFIER
2.2042	IAQ	
2.2043	ITVFI	
2.2044	RISCF	RISC ENROLLMENT INDICATOR
2.2045	FSI	FOREIGN SUBJECTS OF INTEREST
2.2046	TLI	TIER LEVEL INDICATOR
2.2047	RAR	RETURN ALL RECORDS INDICATOR
2.2048	RBSI	RAP BACK SUBSCRIPTION IDENTIFIER
2.2049	EVT	EVENT LIST
2.2049	RBTD	RAP BACK TERM DATE
2.2050	RBSL	RAP BACK SUBSCRIPTION LIST
2.2051	HNOTI	HIT NOTIFICATION INDICATOR
2.2052	MAI	MAINTENANCE ACTION INDICATOR
2.2053	DSPSET	DISPOSITION SET
2.2054	RBSD	RAP BACK SUBSCRIPTION DATE
2.2055	SMS	SMT SIZE
2.2058	SMD	SMT DESCRIPTOR
2.2059	TCL	TATOO COLOR
2.2060	IVFI	
2.2061	BIE	BIOMETRIC IMAGE ENROLLMENT
2.2062	RBNF	RAP BACK AUTHORITY NOTIFICATION
2.2063	RBOO	RAP BACK OPT OUT IN-STATE INDICATOR
2.2064	RBUD	RAP BACK USER DEFINED
2.2064A	RBFN	RAP BACK FIELD NAME
2.2064B	RBFT	RAP BACK FIELD TEXT
2.2065	RBC	RAP BACK CATEGORY
2.2067	RBDI	RAP BACK DISCLOSURE INDICATOR
2.2069	RBTD	RAP BACK TRIGGERING EVENT DETAILS
2.2069A	DORBE	DATE OF RAP BACK EVENT
2.2069B	RBT	RAP BACK TRIGGER
2.2069C	RBEI	RAP BACK EVENT INFORMATION
2.2068	DTR	RAP BACK EXPIRATION DATE RANGE
2.207	RBATN	RAP BACK ATTENTION INDICATOR
2.2071	RBST	RAP BACK SUBSCRIPTION TERM
2.2073	BIL	BIOMETRIC IMAGE LIST
2.2073A	SI	SUBJECT IDENTIFIER
2.2073B	BSI	BIOMETRIC SET IDENTIFIER
2.2073C	BCD	BIOMETRIC CAPTURE DATE
2.2073D	IMT	IMAGE TYPE
2.2100	SED	CUSTODY OR SUPERVISORY STATUS END DATE
2.2101	SST	SUPERVISED STATUS TYPE
2.2102	RSC	REASON SUPERVISION CANCELLED
2.2103	STT	SUPERVION TRANSFERRED TO
2.2103	RSC	REASON SUPERVISION CANCELLED

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
2.2104	SRA	SUPERVISED RELEASE ACTION
7.001	LEN	LOGICAL RECORD LENGTH
7.002	IDC	INFORMATION DESIGNATION CHARACTER
7.003	IMP	IMPRESSION TYPE
7.004	FGP	FINGER POSITION
7.005	ISR	IMAGE SCANNING RESOLUTION
7.006	HLL	HORIZONTAL LINE LENGTH
7.007	VLL	VERTICAL LINE LENGTH
7.008	GCA	GRAYSCALE COMPRESSION ALGORITHM
7.009	IMG	IMAGE DATA
9.001	LEN	LOGICAL RECORD LENGTH
9.002	IDC	INFORMATION DESIGNATION CHARACTER
9.003	IMP	IMPRESSION TYPE
9.004	FMT	MINUTIAE FORMAT
9.014	FGN	FINGER NUMBER
9.015	NMN	NUMBER OF MINUTIAE
9.016	FCP	FINGERPRINT CHARACTERIZATION PROCESS
9.017	APC	AFIS/FBI PATTERN CLASSIFICATION
9.018	ROV	REGION OF VALUE
9.019	COF	COORDINATE OFFSETS
9.020	ORN	ORIENTATION UNCERTAINTY
9.021	CRA	CORE ATTRIBUTES
9.022	DLA	DELTA ATTRIBUTES
9.023	MAT	MINUTIAE AND RIDGE COUNT DATA
9.024	CHQ	CHARACTERIZATION QUALITY
9.025	CLQ	CLASSIFIER QUALITY
9.026 - 9.030	RSV	RESERVED FOR FBI IAFIS FEATURE SET
9.031 - 9.055	RSV	RESERVED FOR COGENT FEATURE SET
9.056 - 9.070	RSV	RESERVED FOR MOTOROLA FEATURE SET
9.071 - 9.099	RSV	RESERVED FOR SAGEM MORPPHO FEATURE SET
9.100 - 9.125	RSV	RESERVED FOR NEC FEATURE SET
9.125 - 9.150	RSV	RESERVED FOR MI-378 FIELDS
9.151 - 9.175	RSV	RESERVED FOR IDENTIX FEATURE SET
9.176	ODD	OTHER FEATURE SET OWNER OR DEVELOPER
9.177	PAG	OTHER FEATURE SETS - PROCESSING ALGORITHM
9.178	SOD	OTHER VENDOR SETS - SYSTEM OR DEVICE
9.179	DTX	OTHER FEATURE SETS – CONTACT INFORMATION AND DESCRIPTIVE TEXT
9.180 - 9.225	RSV	OTHER FEATURE SET DEFINED FIELDS
9.226 - 9.299	RSV	Reserved for future use by ANSI/NIST-ITL
9.300	ROI	REGION OF INTEREST
9.301	ORT	ORIENTATION
9.302	FPP	FINGER, PALM, PLANTAR POSITION
9.303	FSP	FEATURE SET PROFILE
9.304 - 9.306	RSV	Reserved for future use by ANSI/NIST-ITL
9.307	PAT	PATTERN CLASSIFICATION
9.308	RQM	RIDGE QUALITY MAP

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
9.309	RQF	RIDGE QUALITY MAP FORMAT
9.310	RFM	RIDGE FLOW MAP
9.311	RFF	RIDGE FLOW MAP FORMAT
9.312	RWM	RIDGE WAVELENGTH MAP
9.313	RWF	RIDGE WAVELENGTH MAP FORMAT
9.314	TRV	TONAL REVERSAL
9.315	PLR	POSSIBLE LATERAL REVERSAL
9.316	FQM	FRICTION RIDGE QUALITY METRIC
9.317	PGS	POSSIBLE GROWTH OR SHRINKAGE
9.318 - 9.319	RSV	Reserved for future use by ANSI/NIST-ITL
9.320	COR	CORES
9.321	DEL	DELTAS
9.322	CDR	CORE-DELTA RIDGE COUNTS
9.323	CPR	CENTER POINT OF REFERENCE
9.324	DIS	DISTINCTIVE FEATURES
9.325	NCOR	NO CORES PRESENT
9.326	NDEL	NO DELTAS PRESENT
9.327	NDIS	NO DISTINCTIVE FEATURES PRESENT
9.328 - 9.330	RSV	Reserved for future use by ANSI/NIST-ITL
9.331	MIN	MINUTIAE
9.332	MRA	MINUTIAE RIDGE COUNT ALGORITHM
9.333	MRC	MINUTIAE RIDGE COUNTS
9.334	NMIN	NO MINUTIA PRESENT
9.335	RCC	RIDGE COUNT CONFIDENCE
9.336 - 9.339	RSV	Reserved for future use by ANSI/NIST-ITL
9.340	DOT	DOTS
9.341	INR	INCIPIENT RIDGES
9.342	CLD	CREASES AND LINEAR DISCONTINUITIES
9.343	REF	RIDGE EDGE FEATURES
9.344	NPOR	NO PORES PRESENT
9.345	POR	PORES
9.346	NDOT	NO DOTS PRESENT
9.347	NINR	NO INCIPIENT RIDGES PRESENT
9.348	NCLD	NO CEASES PRESENT
9.349	NREF	NO RIDGE EDGE FEATURES PRESENT
9.350	MFD	METHOD OF FEATURE DETECTION
9.351	COM	COMMENT
9.352	LPM	LATENT PROCESSING METHOD
9.353	EAA	EXAMINER ANALYSIS ASSESSMENT
9.354	EOF	EVIDENCE OF FRAUD
9.355	LSB	LATENT SUBSTRATE
9.356	LMT	LATENT MATRIX
9.357	LQI	LOCAL QUALITY ISSUES
9.358 - 9.359	RSV	Reserved for future use by ANSI/NIST-ITL
9.360	AOC	AREA OF CORRESPONDENCE
9.361	CPF	CORRESPONDING POINTS OR FEATURES
9.362	ECD	EXAMINER COMPARISON DETERMINATION
9.363 - 9.371	RSV	Reserved for future use by ANSI/NIST-ITL
9.372	SIM	SKELETONIZED IMAGE
9.373	RPS	RIDGE PATH SEGMENTS
9.374 - 9.399	RSV	Reserved for future use by ANSI/NIST-ITL



**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
10.001	LEN	LOGICAL RECORD LENGTH
10.002	IDC	INFORMATION DESIGNATION CHARACTER
10.003	IMT	IMAGE TYPE
10.004	SRC	SOURCE AGENCY/ORI
10.005	PHD	PHOTO DATE
10.006	HLL	HORIZONTAL LINE LENGTH
10.007	VLL	VERTICAL LINE LENGTH
10.008	SLC	SCALE UNITS
10.009	THPS	TRANSMITTED HORIZONTAL PIXEL SCALE
10.010	TVPS	TRANSMITTED VERTICAL PIXEL SCALE
10.011	CGA	COMPRESSION ALGORITHM
10.012	CSP	COLOR SPACE
10.013	SAP	SUBJECT ACQUISITION PROFILE
10.014	FIP	FACE IMAGE BOUNDING BOX COORDINATES IN FULL IMAGE
10.015	FPFI	FACE IMAGE PATH COORDINATES IN FULL IMAGE
10.016	SHPS	SCAN HORIZONTAL PIXEL SCALE
10.017	SVPS	SCAN VERTICAL PIXEL SCALE
10.018	DIST	DISTORTION
10.019	LAF	LIGHTING ARTFACTS
10.020	POS	SUBJECT POSE
10.021	POA	POSE OFFSET ANGLE
10.022	PXS	PHOTO DESCRIPTION
10.023	PAS	PHOTO ACQUISITION SOURCE
10.024	SQS	SUBJECT QUALITY SCORES
10.025	SPA	SUBJECT POSE ANGLES
10.026	SXS	SUBJECT FACIAL DESCRIPTION
10.027	SEC	SUBJECT EYE COLOR
10.028	SHC	SUBJECT HAIR COLOR
10.029	FFP	2D FACIAL FEATURE POINTS
10.030	DMM	DEVICE MONITORING MODE
10.031	TMC	TIERED MARKUP COLLECTION
10.032	3DF	3D FACIAL FEATURE POINTS
10.033	FEC	FEATURE CONTOURS
10.034 – 10.037	RSV	Reserved for future use by ANSI/NIST-ITL
10.038	COM	COMMENT
10.039	T10	TYPE-10 REFERENCE NUMBER
10.040	SMT	NCIC DESIGNATION CODE
10.041	SMS	SCAR/MARK/TATTOO SIZE
10.042	SMD	SMT DESCRIPTORS
10.043	COL	TATTOO COLORS
10.044	ITX	IMAGE TRANSFORM
10.045	OCC	OCCLUSIONS
10.046 - 10.199	RSV	Reserved for future use by ANSI/NIST-ITL
10.200- 10.900	UDF	USER-DEFINED FIELDS
10.901	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
10.902	ANN	ANNOTATED INFORMATION
10.903	DUI	DEVICE UNIQUE IDENTIFIER
10.904	MMS	MAKE/MODEL/SERIAL NUMBER
10.905 – 10.994	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
10.995	ASC	ASSOCIATED CONTEXT
10.996	HAS	HASH
10.997	SOR	SOURCE REPRESENTATION
10.998	GEO	GEOGRAPHIC SAMPLE ACQUISITION LOCATION

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
10.999	DAT	IMAGE DATA
13.001	LEN	LOGICAL RECORD LENGTH
13.002	IDC	INFORMATION DESIGNATION CHARACTER
13.003	IMP	IMPRESSION TYPE
13.004	SRC	SOURCE AGENCY/ORI
13.005	LCD	LATENT CAPTURE DATE
13.006	HLL	HORIZONTAL LINE LENGTH
13.007	VLL	VERTICAL LINE LENGTH
13.008	SLC	SCALE UNITS
13.009	HPS	HORIZONTAL PIXEL SCALE
13.010	VPS	VERTICAL PIXEL SCALE
13.011	CGA	COMPRESSION ALGORITHM
13.012	BPX	BITS PER PIXEL
13.013	FGP	FINGER/PALM POSITION
13.014	SPD	SEARCH POSITION DESCRIPTORS
13.015	PPC	PRINT POSITION COORDINATES
13.016	SHPS	SCANNED HORIZONTAL PIXEL SCALE
13.017	SVPS	SCANNED VERTICAL PIXEL SCALE
13.020	COM	COMMENT
13.024	LQM	LATENT QUALITY METRIC
13.025 - 13.199	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
13.200- 13.900	UDF	USER-DEFINED FIELDS
13.901	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
13.902	ANN	ANNOTATED INFORMATION
13.903	DUI	DEVICE UNIQUE IDENTIFIER
13.904	MMS	MAKE/MODEL/SERIAL NUMBER
13.905 - 13.994	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
13.995	ASC	ASSOCIATED CONTEXT
13.996	HAS	HASH
13.997	SOR	SOURCE REPRESENTATION
13.998	GEO	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
13.999	DAT	IMAGE DATA
14.001	LEN	LOGICAL RECORD LENGTH
14.002	IDC	INFORMATION DESIGNATION CHARACTER
14.003	IMP	IMPRESSION TYPE
14.004	SRC	SOURCE AGENCY/ORI
14.005	FCD	FINGERPRINT CAPTURE DATE
14.006	HLL	HORIZONTAL LINE LENGTH
14.007	VLL	VERTICAL LINE LENGTH
14.008	SLC	SCALE UNITS
14.009	HPS	HORIZONTAL PIXEL SCALE
14.010	VPS	VERTICAL PIXEL SCALE
14.011	CGA	COMPRESSION ALGORITHM
14.012	BPX	BITS PER PIXEL
14.013	FGP	FINGER POSITION
14.014	PPD	PRINT POSITION DESCRIPTORS
14.015	PPC	PRINT POSITION COORDINATES
14.016	SHPS	SCAN HOR PIXEL SCALE
14.017	SVPS	SCAN VERT PIXEL SCALE
14.020	COM	COMMENT
14.021	SEG	FINGERPRINT SEGMENT POSITION(S)
14.022	NQM	NIST QUALITY METRIC
14.023	SQM	SEGMENTATION QUALITY METRIC
14.024	AFM	ALTERNATE FINGERPRINT QUALITY METRIC

**Table L-2 Complete Element Cross-Reference List by Tag Number**

<b>EBTS Tag Number</b>	<b>Element ID</b>	<b>Element Name</b>
14.030	DMM	DEVICE MONITORING MODE
14.031	FAP	SUBJECT ACQUISITION PROFILE – FINGERPRINT
14.032-14.199	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
14.200	ISC	IMAGE SOURCE CODE
14.201-14.900	UDF	USER-DEFINED FIELDS
14.901	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
14.902	ANN	ANNOTATED INFORMATION
14.903	DUI	DEVICE UNIQUE IDENTIFIER
14.904	MMS	MAKE/MODEL/SERIAL NUMBER
14.905 – 14.994	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
14.995	ASC	ASSOCIATED CONTEXT
14.996	HAS	HASH
14.997	SOR	SOURCE REPRESENTATION
14.998	GEO	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
14.999	DAT	IMAGE DATA
15.001	LEN	LOGICAL RECORD LENGTH
15.002	IDC	INFORMATION DESIGNATION CHARACTER
15.003	IMP	IMPRESSION TYPE
15.004	SRC	SOURCE AGENCY/ORI
15.005	PCD	PALMPRINT CAPTURE DATE
15.006	HLL	HORIZONTAL LINE LENGTH
15.007	VLL	VERTICAL LINE LENGTH
15.008	SLC	SCALE UNITS
15.009	HPS	HORIZONTAL PIXEL SCALE
15.010	VPS	VERTICAL PIXEL SCALE
15.011	CGA	COMPRESSION ALGORITHM
15.012	BPX	BITS PER PIXEL
15.013	FGP	FRICTION RIDGE POSITION
15.016	SHPS	SCAN HOR PIXEL SCALE
15.017	SVPS	SCAN VERT PIXEL SCALE
15.020	COM	COMMENT
15.024	PQM	PALMPRINT QUALITY METRIC
15.030	DMM	DEVICE MONITORING MODE
15.031 - 15.199	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
15.200	ISC	IMAGE SOURCE CODE
15.201-15.900	UDF	USER-DEFINED FIELDS
15.901	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
15.902	ANN	ANNOTATED INFORMATION
15.903	DUI	DEVICE UNIQUE IDENTIFIER
15.904	MMS	MAKE/MODEL/SERIAL NUMBER
15.905 – 15.994	RSV	RESERVED FOR FUTURE DEFINITION by ANSI/NIST-ITL only
15.995	ASC	ASSOCIATED CONTEXT
15.996	HAS	HASH
15.997	SOR	SOURCE REPRESENTATION
15.998	GEO	GEOGRAPHIC SAMPLE ACQUISITION LOCATION
15.999	DAT	IMAGE DATA

**Table L-3 Record Set Requirements Summary by Type of Transaction**

Transaction	Enrollment										
	TOT	T1	T2	T4 <sup>1</sup>	T7	T9 <sup>4</sup>	T10	T13	T14 <sup>5</sup>	T15 <sup>2</sup>	T17 <sup>2</sup>
<b>Identification Service Transactions</b>											
<i>Tenprint Fingerprint Identification Submissions</i>											
CRIMINAL TENPRINT SUBMISSION - ANSWER REQUIRED	<a href="#">CAR</a>	1	1	0-14	0-2	0	0-25		0-20	0-10	0-2
CRIMINAL TENPRINT SUBMISSION - NO ANSWER REQUIRED	<a href="#">CNA</a>	1	1	0-14	0-2	0	0-25		0-20	0-10	0-2
CRIMINAL FINGERPRINT DIRECT ROUTE	<a href="#">CPDR</a>	1	1	0-14	0	0	0-25		0-20	0-10	0-2
CRIMINAL FINGERPRINT PROCESSING NON-URGENT	<a href="#">CPNU</a>	1	1	0-14	0-2	0	0-25		0-20	0-10	0-2
DEPARTMENTAL ORDER CHANNELING ELECTRONIC	<a href="#">DOCE</a>	1	1	0-14	0-2	0	0		0-23	0-10	0-2
ELECTRONIC IN/MANUAL OUT USER FEE	<a href="#">EMUF</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
FEDERAL APPLICANT - NO CHARGE	<a href="#">FANC</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
FEDERAL APPLICANT - USER FEE	<a href="#">FAUF</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
FEDERAL NO-CHARGE DIRECT ROUTE	<a href="#">FNDR</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
NON-FEDERAL NO-CHARGE DIRECT ROUTE	<a href="#">NNDR</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
NON-FEDERAL USER FEE EXPEDITE	<a href="#">NFUE</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
NON-FEDERAL APPLICANT USER FEE	<a href="#">NFUF</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
MISCELLANEOUS APPLICANT – CIVIL	<a href="#">MAP</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
KNOWN DECEASED	<a href="#">DEK</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
UNKNOWN DECEASED	<a href="#">DEU</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
MISSING PERSON	<a href="#">MPR</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
AMNESIA VICTIM	<a href="#">AMN</a>	1	1	0-14	0-2	0	0-25		0-23	0-10	0-2
RAP BACK INDIRECT ENROLLMENT REQUESTS <i>(Future Capability)</i>											
EXTERNAL FINGERPRINT IDENTIFICATION SEARCH <i>(Future Capability)</i>											
<i>Latent Fingerprint Identification Submissions</i>											
LATENT FINGERPRINT IMAGE SUBMISSION <sup>4,3</sup>	<a href="#">LFS</a>	1	1	0-14	0-10	0	0	0-10	0-14	0-10	0
<i>Rapid Fingerprint Identification Submissions</i>											
RAPID FINGERPRINT IDENTIFICATION SEARCH <sup>3</sup>	<a href="#">RPIS</a>	1	1	0-14	0	0	0		0-14	0	0
<i>Foreign Information Fingerprint Identification Submissions</i>											
FOREIGN INFORMATION DIRECT ROUTE	<a href="#">FIDR</a>	1	1	0-14	0-2	0	0-4	0	0-23	0-10	0-2
<i>Disposition Fingerprint Identification Submissions</i>											
ELECTRONIC FINGERPRINT DISPOSITION SUBMISSION <i>(Future Capability)</i>											
<b>Verification Service Transactions</b>											
FINGERPRINT VERIFICATION REQUEST <sup>3</sup>	<a href="#">FVR</a>	1	1	0-14	0	0	0	0	0-14	0	0
<b>Information Service Transactions</b>											
<i>Biometric Image Retrieval Submissions</i>											
BIOMETRIC IMAGE/FEATURE RETRIEVAL	<a href="#">IRQ</a>	1	1	0	0	0	0	0	0	0	0
SUBJECT PHOTO REQUEST	<a href="#">CPR</a>	1	1	0	0	0	0	0	0	0	0
<i>Biometric Audit Trail Retrieval Submissions</i>											
BIOMETRIC AUDIT TRAIL RETRIEVAL	<a href="#">BATQ</a>	1	1	0	0	0	0	0	0	0	0
UNSOLVED LATENT AUDIT TRAIL RETRIEVAL	<a href="#">BATQ</a>	1	1	0	0	0	0	0	0	0	0
<i>Rap Back Information Retrieval Submissions</i>											
RAP BACK SUBSCRIPTION LIST	<a href="#">RBRPT</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK IDENTITY HISTORY SUMMARY REQUEST	<a href="#">RBIHS</a>	1	1	0	0	0	0	0	0	0	0
<b>Investigation Service Transactions</b>											
<i>Tenprint Fingerprint Investigative Searches</i>											

**Table L-3 Record Set Requirements Summary by Type of Transaction**

Transaction	Enrollment										
	TOT	T1	T2	T4 <sup>1</sup>	T7	T9 <sup>4</sup>	T10	T13	T14 <sup>5</sup>	T15 <sup>2</sup>	T17 <sup>2</sup>
TENPRINT FINGERPRINT IMAGE SEARCH <sup>3</sup>	<a href="#">TPIS</a>	1	1	0-14	0	0	0	0	0-14	0	0
TENPRINT RAPSHEET REQUEST <sup>3</sup>	<a href="#">TPRS</a>	1	1	0-14	0	0	0	0	0-14	0	0
<i>Latent Print Investigation Submissions</i>											
LATENT FRICTION RIDGE IMAGE SEARCH <sup>4</sup>	<a href="#">LFIS</a>	1	1-2	0-10	0-10	0	0	0-10	0	0	0
LATENT FRICTION RIDGE FEATURES SEARCH	<a href="#">LFFS</a>	1	1-2	0-10	0-10	1-10	0	0-10	0	0	0
LATENT PENETRATION QUERY	<a href="#">LPNQ</a>	1	1	0	0	0	0	0	0	0	0
<i>Latent Administrative Query Transactions</i>											
LATENT REPOSITORY STATISTICS QUERY	<a href="#">LRSQ</a>	1	1	0	0	0	0	0	0	0	0
<i>Biometric Investigation Submissions</i>											
FACIAL RECOGNITION SEARCH REQUEST	<a href="#">FRS</a>	1	1	0	0	0	1	0	0	0	0
TEXT BASED PHOTO/SMT SEARCH REQUEST	<a href="#">TXTSRCH</a>	1	1	0	0	0	0	0	0	0	0
IRIS INVESTIGATION SEARCH	<a href="#">IIS</a>	1	1	0	0	0	0	0	0	0	1-2
<i>Biographic Investigation Submissions</i>											
EXTERNAL QUERY HISTORY REQUEST	<a href="#">EQHR</a>	1	1	0	0	0	0	0	0	0	0
<b>Data Management Service Transactions</b>											
<i>Latent Image File Maintenance Submissions</i>											
UNSOLVED LATENT RECORD DELETE REQUEST	<a href="#">ULD</a>	1	1	0	0	0	0	0	0	0	0
<i>Biometric Image Submissions</i>											
BIOMETRIC IMAGE SUBMISSION	<a href="#">FIS</a>	1	1	0-14	0	0	0	0	0-34	0-10	0
<b>Biometric File Maintenance Submissions</b>											
<i>Biometric Enrollment Request</i>											
BIOMETRIC ENROLLMENT REQUEST	<a href="#">FIS</a>	1	1	0-14	0	0	0-25	0	0-54	0-8	0-2
<i>Biometric Deletion Requests</i>											
BIOMETRIC DELETE REQUEST	<a href="#">BDEL</a>	1	1	0	0	0	0	0	0	0	0
SUBJECT PHOTO DELETE REQUEST	<a href="#">CPD</a>	1	1	0	0	0	0	0	0	0	0
CIVIL RECORD DELETE REQUEST	<a href="#">CDEL</a>	1	1	0	0	0	0	0	0	0	0
<i>Biometric Decision Requests</i>											
BIOMETRIC DECISION REQUEST	<a href="#">BDEC</a>	1	1	0	0	0	0	0	0	0	0
<i>Identity File Maintenance Submissions</i>											
FOREIGN SUBJECTS OF INTEREST ( <i>Future Capability</i> )											
EXTERNAL FILE MAINTENANCE REQUEST ( <i>Future Capability</i> )											
<i>Disposition File Maintenance Submissions</i>											
DISPOSITION FILE MAINTENANCE REQUEST	<a href="#">DSPE</a>	1	1	0	0	0	0	0	0	0	0
<i>Rap Back File Maintenance Submissions</i>											
RAP BACK SUBSEQUENT SUBSCRIPTION REQUEST - CRIMINAL	<a href="#">RBSCRM</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK SUBSEQUENT SUBSCRIPTION REQUEST - CIVIL	<a href="#">RBSCVL</a>	1	1	0-14	0	0	0	0	0-20	0	0
RAP BACK MAINTENANCE REQUEST	<a href="#">RBMNT</a>	1	1	0	0	0	0	0	0	0	0
<i>External Link File Maintenance Submissions</i>											
EXTERNAL LINK FILE MAINTENANCE REQUEST	<a href="#">XMNT</a>	1	1	0	0	0	0	0	0	0	0

**Table L-3 Record Set Requirements Summary by Type of Transaction**

Transaction	Enrollment										
	TOT	T1	T2	T4 <sup>1</sup>	T7	T9 <sup>4</sup>	T10	T13	T14 <sup>5</sup>	T15 <sup>2</sup>	T17 <sup>2</sup>
EXTERNAL SYSTEM LINK ACTIVITY REQUEST	<u>XACT</u>	1	1	0	0	0	0	0	0	0	0
<i>Supervised Release Notification Request</i> SUPERVISED RELEASE NOTIFICATION REQUEST	<u>SRNR</u>	1	1	0	0	0	0	0	0	0	0

<sup>1</sup> For tenprint submissions, the number of Type-4 images is normally 14 (10 rolled and 4 flat) and the number of Type-14 images is normally 3 flat images. When fewer images are sent, the AMP field of the accompanying Type-2 must account for all missing images.

<sup>2</sup> Type-15 images apply for Palmprint Enrollment and Major Case Print Collections in conjunction with tenprint submissions. Type-17 images apply for Iris Image Enrollment.

<sup>3</sup> Latent transactions should contain at least one image, whether a Type-4/14 or 7/13.

<sup>4</sup> For Type-9, LFFS are used for searching only.

<sup>5</sup> For the Type-14, the images associated with the tenprint card source are used for searching and enrollment while the remaining images will be enrolled as secondary supplemental images.

**Table L-4 Record Set Requirements Summary by Type of Response**

Transaction	TOT	T1	T2	T4*	T7	T9	T10	T13	T14*	T15**	T17
<b>Identification Service Responses</b>											
RAPID FINGERPRINT IDENTIFICATION SEARCH RESPONSE	<a href="#">RPISR</a>	1	1-2	0	0	0	0-2	0	0	0	0
SUBMISSION RESULTS - ELECTRONIC	<a href="#">SRE</a>	1	1	0	0	0	0-1	0	0	0	0
LATENT SUBMISSION RESULTS	<a href="#">LSR</a>	1	1	0	0	0	0	0	0	0	0
TENPRINT TRANSACTION ERROR	<a href="#">ERRT</a>	1	1	0	0	0	0	0	0	0	0
DISPOSITION RESPONSE ( <i>Future Capability</i> )											
<b>Verification Service Responses</b>											
SUBMISSION RESULTS – ELECTRONIC	<a href="#">SRE</a>	1	1	0	0	0	0-1	0	0	0	0
<b>Information Service Responses</b>											
BIOMETRIC AUDIT TRAIL RETRIEVAL RESPONSE	<a href="#">BATR</a>	1	1	0	0	0	0	0	0	0	0
IMAGE REQUEST RESPONSE	<a href="#">IRR</a>	1	1	0-14	0	0	0-1	0-10	0-34	0-10	0
IMAGE SUMMARY RESPONSE	<a href="#">ISR</a>	1	1	0	0	0	0	0	0	0	0
IMAGE TRANSACTION ERROR	<a href="#">ERRI</a>	1	1	0	0	0	0	0	0	0	0
PHOTO REQUEST RESPONSE	<a href="#">PRR</a>	1	1	0	0	0	0-4	0	0	0	0
RAP BACK IDENTITY HISTORY SUMMARY RESPONSE	<a href="#">RBIHSR</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK SUBSCRIPTION LIST RESPONSE	<a href="#">RBRPTR</a>	1	1	0	0	0	0	0	0	0	0
<b>Investigative Services Responses</b>											
SEARCH RESULTS - TENPRINT	<a href="#">SRT</a>	1	1	0-280	0-20	0	0	0-20	0-280	0	0
TENPRINT TRANSACTION ERROR	<a href="#">ERRT</a>	1	1	0	0	0	0	0	0	0	0
TENPRINT RAPSHEET RESPONSE	<a href="#">TPRR</a>	1	1	0	0	0	0	0	0	0	0
SEARCH RESULTS - LATENT	<a href="#">SRL</a>	1	1	0-20	0	0-30	0	0-20	0-40	0-40	0
LATENT PENETRATION RESPONSE	<a href="#">LPNR</a>	1	1	0	0	0	0	0	0	0	0
LATENT TRANSACTION ERROR	<a href="#">ERRL</a>	1	1	0	0	0	0	0	0	0	0
LATENT REPOSITORY STATISTICS QUERY	<a href="#">LRSR</a>	1	1	0	0	0	0	0	0	0	0
ELECTRONIC HISTORY REQUEST RESPONSE	<a href="#">EHRR</a>	1	1	0	0	0	0	0	0	0	0
EXTERNAL QUERY HISTORY REQUEST RESPONSE - SUMMARY	<a href="#">EQRR</a>	1	1	0	0	0	0	0	0	0	0
EXTERNAL QUERY HISTORY ERROR RESPONSE	<a href="#">EQER</a>	1	1	0	0	0	0	0	0	0	0
TRANSACTION ERROR (ELECTRONIC RESPONSE)	<a href="#">ERRR</a>	1	1	0	0	0	0	0	0	0	0
SEARCH RESULTS - BIOMETRIC	<a href="#">SRB</a>	1	1	0	0	0	0-20	0	0	0	0-40
<b>Notification Service Responses</b>											
UNSOLVED LATENT MATCH RESPONSE	<a href="#">ULM</a>	1	1	0-14	0-10	0	0	0-10	0-20	0-10	0
UNSOLICITED UNSOLVED BIOMETRIC DELETE	<a href="#">UUBD</a>	1	1	0	0	0	0	0	0	0	0
UNSOLICITED UNSOLVED LATENT DELETE	<a href="#">UULD</a>	1	1	0	0	0	0	0	0	0	0
UNSOLICITED BIOMETRIC MATCH RESPONSE	<a href="#">UBM</a>	1	1	0	0	0	0-2	0	0	0	0
SPECIAL POPULATION COGNIZANT NOTIFICATION ( <i>Future Capability</i> )											
RAP BACK ACTIVITY NOTIFICATION	<a href="#">RBN</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK RENEWAL NOTIFICATION	<a href="#">RBRN</a>	1	1	0	0	0	0	0	0	0	0
UNSOLICITED HIT NOTIFICATION	<a href="#">UHN</a>	1	1	0	0	0	0	0	0	0	0

**Table L-4 Record Set Requirements Summary by Type of Response**

Transaction	TOT	T1	T2	T4*	T7	T9	T10	T13	T14*	T15**	T17
<b>Data Management Service Responses</b>											
PHOTO DELETE RESPONSE	<a href="#">PDR</a>	1	1	0	0	0	0	0	0	0	0
BIOMETRIC DECISION RESPONSE	<a href="#">BDECR</a>	1	1	0	0	0	0	0	0	0	0
UNSOLVED LATENT RECORD DELETE RESPONSE	<a href="#">ULDR</a>	1	1	0	0	0	0	0	0	0	0
UNSOLICITED UNSOLVED LATENT DELETE	<a href="#">UULD</a>	1	1	0	0	0	0	0	0	0	0
ADMINISTRATIVE TRANSACTION ERROR	<a href="#">ERRA</a>	1	1	0	0	0	0	0	0	0	0
BIOMETRIC DELETE RESPONSE	<a href="#">BDELR</a>	1	1	0	0	0	0	0	0	0	0
FINGERPRINT IMAGE SUBMISSION RESPONSE	<a href="#">FISR</a>	1	1	0	0	0	0	0	0	0	0
IDENTITY FILE MAINTENANCE SUBMISSION ( <i>Future Capability</i> )											
CIVIL DELETION RESPONSE	<a href="#">CDELR</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK SUBSCRIPTION RESPONSE	<a href="#">RBSR</a>	1	1	0	0	0	0	0	0	0	0
RAP BACK MAINTENANCE RESPONSE	<a href="#">RBMNTR</a>	1	1	0	0	0	0	0	0	0	0

\* Type-4 images is normally 14 and the number of Type-14 images is normally 3, for tenprint submissions. Type-2 AMP field must account for all missing images when fewer images are sent.

\*\* Type-15 images apply for Palmprint Enrollment and Major Case Print Collections in conjunction with tenprint submissions. Type-17 images apply for Iris Image Enrollment.



**Table L-5 Transaction/Response/Error TOT Correspondence**

<b>Transaction</b>	<b>TOT</b>	<b>Response TOTs</b>	<b>Delayed Response TOTs</b>	<b>Error TOTs</b>
<b>Identification Service Transactions</b>				
<i>Tenprint Fingerprint Identification Submissions</i>				
CRIMINAL TENPRINT SUBMISSION - ANSWER REQUIRED	CAR	SRE	RBN	ERRT
CRIMINAL TENPRINT SUBMISSION - NO ANSWER REQUIRED	CNA	None	RBN	ERRT
CRIMINAL FINGERPRINT DIRECT ROUTE	CPDR	SRE	RBN	ERRT
CRIMINAL FINGERPRINT PROCESSING NON-URGENT	CPNU	SRE	RBN	ERRT
DEPARTMENTAL ORDER CHANNELING ELECTRONIC	DOCE	SRE	RBN	ERRT
ELECTRONIC IN/MANUAL OUT USER FEE	EMUF	SRE	RBN	ERRT
FEDERAL APPLICANT - NO CHARGE	FANC	SRE	RBN	ERRT
FEDERAL APPLICANT - USER FEE	FAUF	SRE	RBN	ERRT
FEDERAL NO-CHARGE DIRECT ROUTE	FNDR	SRE	RBN	ERRT
NON-FEDERAL NO-CHARGE DIRECT ROUTE	NNDR	SRE	RBN	ERRT
NON-FEDERAL USER FEE EXPEDITE	NFUE	SRE	RBN	ERRT
NON-FEDERAL APPLICANT USER FEE	NFUF	SRE	RBN	ERRT
MISCELLANEOUS APPLICANT – CIVIL	MAP	SRE	RBN	ERRT
KNOWN DECEASED	DEK	SRE	RBN	ERRT
UNKNOWN DECEASED	DEU	SRE	RBN	ERRT
MISSING PERSON	MPR	SRE	RBN	ERRT
AMNESIA VICTIM	AMN	SRE	RBN	ERRT
RAP BACK INDIRECT ENROLLMENT REQUESTS <i>(Future Capability)</i>				
EXTERNAL FINGERPRINT IDENTIFICATION SEARCH <i>(Future Capability)</i>				
<i>Latent Fingerprint Identification Submissions</i>				
LATENT FINGERPRINT IMAGE SUBMISSION	LFS	LSR		ERRL
<i>Rapid Fingerprint Identification Submissions</i>				
RAPID FINGERPRINT IDENTIFICATION SEARCH	RPIS	RPISR		ERRT
<i>Foreign Information Fingerprint Identification Submissions</i>				
FOREIGN INFORMATION DIRECT ROUTE	FIDR	SRE	UHN	ERRT
<i>Iris Identification Submissions</i>				
IRIS IDENTIFICATION SEARCH	IIDS	SRE		ERRB
<i>Disposition Fingerprint Identification Submissions</i>				
ELECTRONIC FINGERPRINT DISPOSITION SUBMISSION <i>(Future Capability)</i>	FDSP	DSPR		ERRT
<b>Verification Service Transactions</b>				
FINGERPRINT VERIFICATION REQUEST	FVR	SRE		ERRT

**Information Service Transactions**  
*Biometric Image Retrieval Submissions*

**Table L-5 Transaction/Response/Error TOT Correspondence**

<b>Transaction</b>	<b>TOT</b>	<b>Response TOTs</b>	<b>Delayed Response TOTs</b>	<b>Error TOTs</b>
BIOMETRIC IMAGE/FEATURE RETREIVAL SUBJECT PHOTO REQUEST	IRQ CPR	IRR PRR	ISR	ERRI PRR
<i>Biometric Audit Trail Retrieval Submissions</i> BIOMETRIC AUDIT TRAIL RETRIEVAL	BATQ	BATQR		ERRI
<i>Rap Back Information Retrieval Submissions</i> RAP BACK SUBSCRIPTION LIST RAP BACK IDENTITY HISTORY SUMMARY REQUEST	RBRPT RBIHS	RBRPTR RBIHSR		ERRI ERRI
<b>Investigation Service Transactions</b>				
<i>Tenprint Fingerprint Investigative Searches</i> TENPRINT FINGERPRINT IMAGE SEARCH TENPRINT RAPSHEET REQUEST	TPIS TPRS	SRT TPRR		ERRT ERRT
<i>Latent Print Investigation Submissions</i> LATENT FRICTION RIDGE IMAGE SEARCH LATENT FRICTION RIDGE FEATURES SEARCH LATENT PENETRATION QUERY	LFIS LFFS LPNQ	SRL SRL LPNR	ULM, UULD ULM, UULD	ERRL ERRL ERRL
<i>Latent Administrative Query Transactions</i> LATENT REPOSITORY STATISTICS QUERY	LRSQ	LRSR		ERRA
<i>Biometric Investigation Submissions</i> FACIAL RECOGNITION SEARCH REQUEST TEXT BASED PHOTO/SMT SEARCH REQUEST IRIS IMAGE INVESTIGATION SEARCH PHOTO INVESTIGATION SEARCH ( <i>Future Capability</i> )	FRS TXTSRCH IIS	SRB SRB SRB	UUBD, UBM	ERRB ERRB ERRB
<i>Biographic Investigation Submissions</i> EXTERNAL QUERY HISTORY REQUEST	EQHR	EQRR, EHRR		EQER, ERRR
<b>Data Management Service Transactions</b>				
<i>Latent Image File Maintenance Submissions</i> UNSOLVED LATENT RECORD DELETE REQUEST	ULD	ULDR		ERRL
<i>Biometric Image Submissions</i> BIOMETRIC IMAGE SUBMISSION	FIS	FISR		ERRI
<i>Biometric File Maintenance Submissions</i> <i>Biometric Enrollment Request</i> FINGERPRINT ENROLLMENT REQUEST ( <i>Future Capability</i> )				

**Table L-5 Transaction/Response/Error TOT Correspondence**

<b>Transaction</b>	<b>TOT</b>	<b>Response TOTs</b>	<b>Delayed Response TOTs</b>	<b>Error TOTs</b>
SUPPLEMENTAL FINGERPRINT AND PALMPRINT ENROLLMENT REQUEST	FIS	FISR		ERRA
PHOTO ENROLLMENT REQUEST	FIS	FISR		ERRA
PALMPRINT ENROLLMENT REQUEST	FIS	FISR		ERRA
IRIS ENROLLMENT REQUEST ( <i>Future Capability</i> )				
<i>Biometric Deletion Requests</i>				
BIOMETRIC DELETE REQUEST	BDEL	BDEL		ERRA
SUBJECT PHOTO DELETE REQUEST	CPD	PDR		PDR
CIVIL RECORD DELETE REQUEST	CDEL	CDEL		ERRA
<i>Biometric Decision Requests</i>				
BIOMETRIC DECISION RESPONSE	BDEC	BDEC	UBM	ERRA
<i>Identity File Maintenance Submissions</i>				
FOREIGN SUBJECTS OF INTEREST ( <i>Future Capability</i> )				
EXTERNAL FILE MAINTENANCE REQUEST ( <i>Future Capability</i> )				
<i>Disposition File Maintenance Submissions</i>				
DISPOSITION FILE MAINTENANCE REQUEST	DSPE	DSPR		ERRA
<i>Rap Back File Maintenance Submissions</i>				
RAP BACK SUBSEQUENT SUBSCRIPTION REQUEST - CRIMINAL	RBSCRM	RBSR	RBN	ERRA
RAP BACK SUBSEQUENT SUBSCRIPTION REQUEST - CIVIL	RBSCVL	RBSR	RBN	ERRA
RAP BACK MAINTENANCE REQUEST	RBMNT	RBMNTR		ERRA
<i>External Link File Maintenance Submissions</i>				
EXTERNAL SYSTEM LINK MAINTENANCE REQUEST	XMNT	XMNTR		ERRA

## **APPENDIX M: TRANSACTION MESSAGES**

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DRAFT

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
A0001	Unauthorized ULF delete	Requested deletion from ULF not authorized.	0			
A0002	Unauthorized Criminal History Access	Request suspended. Initiate a Print Screen and route document and printout to supervisor.	0			
A0003	Unauthorized SPF Modification	Request suspended. Route to Supervisor. PRD review and authorization is required.	0			
A0004	Unauthorized EBTS Transaction	Requestor is not authorized for transaction type %1.	1	TOT of incoming message		
A0005	Unauthorized Criminal History Access	Requestor is not authorized to change, or establish the subject record existing record with FNU %1. Document Specialist review and authorization is required.	1	FNU		
A0006	Unauthorized Processing or SPF Modification	Requestor is not authorized for requested action. Document Specialist review and authorization is required.	0			
A0007	Unauthorized Criminal History Access	Requestor is not authorized to access existing record with FNU %1. Hits to Wants review and authorization is required.	1	FNU		
A0008	Unauthorized ULF Add Confirm	Requested ULF Add Confirm request not authorized.	0			
A0009	Latent Search Queue Request Reject	This Latent Search Queue modification request is invalid.	0			
A0010	Hit to Want	IDRR or NIDR cannot be provided without proper authorization. Route to Answer Hits to Wants.	0			
A0011	Unauthorized IDRR/NIDR Request (SPF 5/6/C/N)	Request suspended. Route to Supervisor. PRD review and authorization is required.	0			
A0012	Unauthorized IDRR Request (DOD or SPF K)	Unauthorized Service Provider (not DOCSPEC) requests IDRR (A1040) for a subject with DOD in identification data or SPF=K.	0			
A0013	Unauthorized Criminal History Request (OFO)	An OFO User is authorized to use the Criminal History Request only for an IDRR, either printed locally or displayed.	0			
A0014	Unauthorized CCA Update	Requestor is not authorized to update the CCA File.	0			
A0015	Unauthorized File Update	Requestor is not authorized to update the requested file.	0			
A0016	Unauthorized Repository Access	Requestor search of repository %1 not authorized	1	NDR		
A0017	Unauthorized Dissemination Information Access	Requestor does not own the imagery in the audit trail dissemination information request	0			
A0018	Unauthorized Biometric Delete	Requested deletion of UCN %1 BSI %2 is not authorized for requestor	2	UCN	BSI	
A0019	Rap Back Subscription Does Not Exist	An active Rap Back subscription does not exist for the UCN %1 and subscription %2	2	UCN	RBSI	
A0020	The Maximum Rap Back Subscription List Size was Exceeded.	The Maximum Rap Back Subscription List Size was Exceeded. Either further filter the subscriptions returned and resubmit, or contact CJIS customer service.	0			
B0001	Unable to generate template	A template could not be created for the submitted image				
B0002	Corrupt Image	The submitted image is corrupted				

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
E0001	Required element missing	Mandatory element %1 was not supplied in message.	1	Element Name		
E0002	Element failed validation	Element %1, with value of [%2] contains invalid data.	2	Element Name	Element Value	
E0003	Element failed validation	Element %1, with value of [%2] contains invalid data. The data may not comply with the acceptable range of values.	2	Element Name	Element Value	
E0004	EBTS record parse error	EBTS logical record type %1 containing IDC of [%2] in message does not comply with message Contents or Length field values or the record is not parseable	2	Logical Record Type	IDC value or the value -1 if the named logical record is missing or is a Type-1 record.	
E0005	EBTS field parse error	EBTS field %1 could not be parsed. Check use of separator characters and presence of all required subfields.	1	Field Tag		
E0006	Field relationship error	The value of element %1 is inconsistent with the value of element %2.	2	Element Name	Element Name	
E0007	NFS File not available	NFS file %1 is not available for transfer.	1	FILEHANDLE		
E0008	NFS File Read Error	NFS file %1 produced a read error during file transfer. Check for proper format. %2 %3	39815	FILEHANDLE	Free Text	Free Text
E0009	NFS File ICN Error	NFS File ICN does not match the ICN provided in the request message.	0			
E0010	Too Few FNUs for FST	Only one FNU, %1, was supplied for Restore FNU File Synchronization with FST %2.	2	FNU	FST	
E0011	Too Many FNUs for FST	More than one FNU was supplied for Restore FNU File Synchronization with FST %1.	1	FST		
E0012	Message Length Inconsistent	The length of the CJIS WAN message is inconsistent with the sum of the lengths of the logical records contained within it.	0			
E0013	NFS File Write Error	NFS file %1 produced a write error during file transfer %2 %3.	1-3	FILEHANDLE	Free Text	Free Text
H0001	Required header element missing	Mandatory element %1 was not supplied in message header.	1	Element Name		
H0002	Header element failed validation	Header element %1, with value of [%2] contains invalid data.	2	Element Name	Element Value	
H0003	Header element failed validation	Header element %1, with value of [%2], contains invalid data. The data may not comply with the acceptable range of values.	2	Element Name	Element Value	
L0001	SLC Repositories Full	SPC repository %1 is at max allowed records; to add new subject, delete existing subject.	1	NDR		
L0002	Subject does not exist in Criminal or Civil File	Subject with identifier %1 does not exist in repository.	1	UCN		
L0003	SPC Repository does not exist	Cannot perform requested action, SPC repository %1 does not exist. Inform Segment Administrator of possible SPC File Synchronization error.	1	NDR		
L0004	File image not available	The images for subject identifier %1 are not available from repository %2.	2	UCN	NDR	

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0005	High Penetration Search Rejected	Latent search penetration estimate of %1 percent exceeds the allowable limit of %2 percent.	2	Request Percent	Authorization Cap	
L0006	Invalid image type	The supplied image(s) could not be used for characterization of subject.	0			
L0007	Features not usable	The supplied features could not be used for requested search.	0			
*L0008	Characteristics quality low	The quality of the characteristics is too low to be used.	0			
L0009	Image decompression error	Error occurred during decompression of the images.	0			
L0010	Cannot search an empty SPC repository	A search request was made against SPC repository number %1 which currently contains no subjects. To differentiate from a search with no results, this error is being returned.	1	NDR		
L0011	Subject already exists, duplicates not allowed in Criminal or Civil Files	A request was made to add subject identifier %1 to Criminal or Civil File in which the subject already exists.	1	UCN		
L0012	ULF Delete Error	An error was encountered in processing the requested deletion from the Unsolved Latent File.	0			
L0013	General Logic Error	A general logic error was detected that is not currently defined. Optional error message: %1 %2 %3.	0-3	Free Text	Free Text	Free Text
L0014	ULF Delete Subject Missing	Cannot perform the ULF delete request for %1 because the subject is not present in the ULF.	1	SCNA		
L0015	Attempt to remove last arrest, court, or custody component	An attempt has been made to remove the last	2	Field Name	FNU	
L0016	Latent Search Penetration Estimate	NOTICE ONLY, NOT AN ERROR – Latent search penetration estimate is %1. Your limit is currently %2.	2	Request Percentage	Authorization Cap	
L0017	Attempt to modify SCHF with improper TYS	Attempt to change the Criminal History File with an improper TYS of %1.	1	TYS		
L0018	Latent search queue full	The requested search exceeds the allocation for your organization or state.	0			
L0019	Subject already exists, duplicate identifiers not allowed in SPC file	A request was made to add subject identifier %1 to SPC repository %2 in which the subject already exists. Subjects may NOT be duplicated within this repository.	2	UCN	NDR	
L0020	Subject does not exist in SPC file	A request was made to delete or update subject identifier %1 to SPC repository %2. The subject does not exist in this repository.	2	UCN	NDR	
L0021	Restorability Mismatch	FNU %1 with restorability code of RST %2 does not match that provided in message.	2	FNU	RST value of FNU	
L0022	FNU Not Restorable	FNU %1 has not undergone a restorable action.	1	FNU		
L0023	SID required	NFF participants must provide a SID on a criminal retain tenprint submission.	0			
L0024	SID already exists for NFF submission	The SID provided in the criminal tenprint submission, %1, is already associated with the subject with FBI number %2 and could not be established for a new NFF subject.	2	SID	FNU	

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0025	SID already exists	The SID provided in the criminal ten- print submission, %1, is already associated with the subject with FBI number %2 and could not be established for a new subject.	2	SID	UCN	
L0026	PUR not allowed for subject	Purpose code not allowed for subject %1.	1	FNU		
L0027	SPCs not allowed	A manual record cannot be established with additional SPC codes.	0			
L0028	Exceeded ICO maximum length	Cannot add data because the maximum length of ICO field would be exceeded. There are only %1 characters remaining in the ICO field.	1	Number of unused bytes remaining in ICO field (ASCII representation).		
L0029	Invalid update of subject with AUD C	Cannot update subject record %1 because it contains an AUD = C	1	FNU		
L0030	Invalid update of subject with AUD T	Cannot update subject?s record %1 because it contains an AUD = T.	1	FNU		
L0031	Invalid update of subject record	Cannot update subject record %1 because of its AUD value.	1	FNU		
L0033	Element Entry Limit Exceeded	The requested update of this record would cause the maximum number of entries of the %1 field to be exceeded.	1	Field Name		
L0034	Existing identification comments	Cannot overwrite existing ICO.	0			
L0035	DOD prior to DOA	Date of arrest in submission is later than the date of death in subject's record.	0			
L0036	Conversion anomaly	Cannot add a conversion cycle for an NFF participating state.	0			
L0037	DOA not later than existing DOB	Date of arrest in submission is prior to existing date of birth in the subject's record.	0			
L0038	SID already exists from NFF state	Cannot establish new SID %1 for this subject because your state has already established SID %2 for this subject.	2	SID from submission	Existing SID	
L0039	Purpose Code Required	Purpose code is required to modify this record.	0			
L0041	Cannot Update Due to Inactive Data	The subject cycle cannot be updated due to inactive record status.	0			
L0042	No Matching Court Data	Matching court data does not exist.	0			
L0043	No Corresponding Court Count	Cannot add supplemental court data - there is no corresponding court count.	0			
L0044	No Update of NFF Record	Cannot update NFF record.	0			
L0045	Data Already On File	Cannot update this cycle - data already exists in record.	0			
L0046	TPTP Notify Error	AFIS Search number %1 or candidate number %2 cannot be associated with previous search.	2	SCNA	UCN	
L0047	ULF Add Confirm Error	Cannot perform the ULF add confirm request for %1 because the subject is not present in the ULF.	1	SCNA		
L0048	Route to Wants	Route this document to the Wants group for processing.	0			
L0049	No Matching Data Found	No data found to match input value %1 with record value %2.	2	Name of field	field value	
L0050	Invalid Request for Segment Type	This maintenance request cannot be applied because of the SGT value contained in the record.	0			



**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0051	Cycle is not sealed.	Cannot apply unseal request because cycle has not previously been sealed.	0			
L0052	Submitter is not Authorized to Update Record	Requestor is not authorized to perform the requested file maintenance action.	0			
L0053	Attempt to Consolidate AUD M Record	The request for consolidation has been made against a record %1 in the Manual File. Record must be converted.	1 FNU			
L0054	Reverse Consolidation Pointers	Reverse kept FNU (%1) and killed FNUs due to the III pointers contained in the respective records.	1 FNU			
L0055	Consolidation Subject Contains NFF State Pseudo Pointer	Consolidation attempt has been made against subject record containing a Pseudo Pointer for an NFF state for FNU %1.	1 FNU			
L0056	Reverse Consolidation Wants	Reverse kept FNU (%1) and killed FNUs due to Wants contained in the respective records.	1 FNU			
L0057	Improper Finger Specified	Latent searches cannot process %1 possible finger positions for %2 supplied search fingers.	2 FGN_CNT		AFV_CNT	
L0058	UCN and NDR format incompatible	The designated repository (%1) does not correlate to the provided record format number (%2).	2 NDR		UCN	
L0059	Duplicate fingers	Ten finger information supplied for field %1 (%2) is incorrect.	2 Name of field		Field Value	
L0060	Death is already recorded for this subject.	An indication that this subject is deceased is currently present in this record.	0			
L0061	Non-matching DOB	DOB on submission document does not match DOB in record.	0			
L0062	Reference Element Name Mismatch	The element %1 provided for reference in this maintenance request is not present in this record.	1 Name of Field			
L0063	Existing Data Condition	Data cannot be added to this field, %1, because data is already present.	1 Name of Field			
L0064	Duplicate Data Condition	An attempt has been made to add or modify data that duplicates existing data in field %1.	1 Name of Field			
L0065	SID/ORI Mismatch	The SID in the maintenance request is not consistent with the ORI in the arrest.	0			
L0066	SID/Pointer Mismatch	The SID in the maintenance request does not match the state pointer in the MF-IDENTIFICATION-DATA set.	0			
L0067	Illegal Add to AUD N Record	An attempt has been made to add data to a deceased record.	0			
L0068	Illegal Add to Non-AUD N Record	An attempt has been made to post microform data to a record containing an AUD other than N.	0			
L0069	Invalid SPF Request	Existing SPF code precludes addition of this code.	0			
L0070	Illegal Sequence Count	A request has been made for a value in %1 that is not the next available after %2 in the sequence.	2 Field Name		Current last value	
L0071	Illegal Delete Request for AUD W Record	A request has been made for deletion of data from a field other than ANA from an AUD W record.	0			

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0072	No Match for Data	Cannot match data in field %1 in this maintenance request with any data in field %2 of the record.	2	Field Name	Field Name	
L0073	Cannot Delete SID	Cannot delete SID because record contains a matching state pointer.	0			
L0074	Illegal Request to Delete Primary Data	Cannot delete primary data while secondary data is still present.	0			
L0075	Illegal Request to Remove Custody Data	Attempt has been made to remove a custody segment while corresponding arrest data remains.	0			
L0076	Illegal SCH Modification Request	An SCH Modification request has attempted to perform a maintenance action against a record awaiting expungement.	0			
L0077	Invalid Modify Request Because of Code Value Set	Cannot modify field %1 because of the value of %2 code contained in record.	2	Field Name	Either AUD or SGT	
L0078	Field Value Mismatch	Cannot find match in the database for %1 containing value %2.	2	Field Name	Field Value	
L0079	Invalid SID	The SID %1 failed III edit check.	1	SID value		
L0080	Pointer/Data Mismatch	Cannot update data associated with active state pointer because of mismatch with %1 field.	1	Field Name		
L0081	Attempt to Modify Empty Field	A maintenance request has been made against empty field %1.	1	Field Name		
L0082	ORI Exists in CCA File	The ORI contained in the Add request already exists in the CCA File.	0			
L0083	ORI does not exist in CCA File	The ORI contained in the maintenance request does not exist in the CCA File.	0			
L0084	Alternate ORI does not exist in CCA File	The alternate ORI contained in the maintenance request does not exist in the CCA File.	0			
L0085	Alternate ORI cannot be deleted	Cannot delete alternate ORI because ONC is equal to ?A?.	0			
L0086	CRS Data does not exist	The maintenance request references CRS data that does not exist.	0			
L0087	CRS data already exists	The maintenance request has attempted to add CRS data that already exists.	0			
L0088	Attempt to Update AUD W Record	The maintenance request has attempted to add data to a deleted record.	0			
L0089	Year of Birth out of range	The year of birth in the maintenance request is not within ten years of the DOB(s) contained in the subject record.	0			
L0090	No Name Match	The name in the maintenance request does not match any name contained in the indicated subject record.	0			
L0091	NIC Number Match	The maintenance request contains a NIC number already contained in the SCH.	0			
L0092	DOW Matches DOB	The DOW contained in the maintenance request matches a DOB in the subject record.	0			
L0093	Attempt to Delete Last Want	A request has been received to delete the last active Want from a record containing an AUD = ?P?.	0			
L0094	AKA/ANA Error	A request has been made to delete or modify AKA with matching ANA present.	0			

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0095	ANF/Name Error	A request has been made to modify ANF without a matching AKA or MNM present.	0			
L0096	DOB Delete Error	A request has been made to delete the last DOB contained in the SCH record.	0			
L0097	DOB Modification Error	A request has been made to modify a DOB to ?unknown? (all zeroes) with DOBs remaining in the SCH record.	0			
L0098	Arrest Segment Data Error	This maintenance request must include ACH, AON, and AOL.	0			
L0099	CBL/DCA Error	An attempt has been made to add a CBL without a related DCA in either the request message or the SCH record.	0			
L0100	Court Segment Data Error	This maintenance request must include CCT, CON, COL, and CPL.	0			
L0101	Pointer/Date Mismatch	A request has been made to modify either %1 or %2 that would result in a DPE greater than the DDE.	2			
L0102	Illegal AID Modification	Cannot change the ORI to a different type or different state.	0			
L0103	Photo SPF ?E? Error	A request has been made to either set or remove SPF of ?E? that would be inconsistent with the state of CRIMINAL-SUBJECT-PHOTO-DATA.	0			
L0104	TOW/AID Error	If input TOW or input AID is blank	0			
L0105	Insufficient CCA Data	Cannot add, modify, or delete an ORI.	0			
L0106	ORI/ZIP	The format of the field ZIP is not consistent with the country specified by ORI.	0			
L0107	Incomplete SCT	A request has been made that is missing a required element from set SCT.	0			
L0108	Invalid ONC Value	An attempt has been made to add a new ORI to a record containing an ONC value other than ?A? or ?D?.	0			
L0109	Poor Image Quality	The quality of the images is too poor to permit processing.	0			
L0110	MRD Merge Failure	Tenprint submission failed to merge with MRD data.	0			
L0111	Image Sequence Error	Submitted tenprint finger images are out of sequence.	0			
L0112	No statutory authority	The agency indicated by the ORI or CRI in this submission is not authorized to request this service.	0			
L0113	Non-serious charge	This submission references an arrest charge representing a non-criterion offense.	0			
L0114	TOT/Submission Data Error	The Type of Transaction is inconsistent with the Reason Fingerprinted.	0			
L0115	Other QC Error	A QC error has occurred.	0			
*L0116	Fingerprint Pattern Quality Error	Fingerprint pattern(s) not discernible	0			
*L0117	Fingerprint Pattern Area Error	Insufficient pattern area(s) recorded for identification purposes	0			
*L0118	ITN Image Quality/Sequence Error	Erroneous or incomplete fingerprint(s) on images: fingers or hands out of sequence, printed twice, missing, and no reason given.	0			

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0119	Charge listed needs literal translation	The charge listed in the submission requires that a literal translation be provided.	0			
L0120	Invalid update of subject with AUD N	Cannot update subject record %1 because AUD = N.	1	FNU		
L0121	Invalid update of subject with AUD M	Cannot update record %1 because this record is currently contained in the manual file. Record must be converted.	1	FNU		
L0122	No SPC Add	Unable to complete SPC Add for identifier %1 in repository %2 and user %3.	3	UCN	NDR	EID
L0123	No SPC Delete	Unable to complete SPC Delete for identifier %1 in repository %2 and user %3.	3	UCN	NDR	EID
L0124	Unacceptable Criteria	The submission does not meet latent acceptance criteria.				
L0125	Invalid ORI	This ORI, %1, is not present in the CCA file.	1	ORI value from Maintenance Request		
L0126	Invalid CRI	This CRI, %1, is not present in the CCA file.	1	CRI value from Maintenance Request		
L0127	Invalid SCT	This file maintenance request contained an SCT with invalid ORI of %1.	1	ORI value from Maintenance Request		
L0128	Missing SRE	This file maintenance request must contain a value for SRE.	0			
L0129	Missing PUR code	Subject record contains sealed data - this request for an IDRR requires a PUR code.	0			
L0130	File maintenance element error	This file maintenance request contains invalid data, %1, in the field %2.	2	Field value from Maintenance Request	Field	
L0131	Required element missing	Mandatory element %1 was omitted from message.	1	Element Name		
L0132	STOT/NDR Discrepancy	The STOT, %1, for this request is not consistent with placing the images in the %2 file.	2	STOT value	Name of the target file (NDR)	
L0133	Fingerprint Image Submission Non-ident	The subject of this Fingerprint Image Submission contains UCN %1, which is not contained in the FBI Subject Criminal History files.	1	UCN		
L0134	Ad Hoc Subject Search String Syntax Error	The submitted search string text contains a syntax error. The portion of the string up to the error is shown here: %1 (See note #8 above).	1	The expanded query string up to point of error		
L0135	Ad Hoc Subject Search Candidate Cap Exceeded	The number of candidates meeting the submitted search criteria, %1, exceeds the maximum allowed, %2. Refine the criteria before resubmitting the search. (See note #8 above).	2	Number of candidates returned from the Ad Hoc Search (element MAXCANS)	The element MAXCANS from the search request or, if MAXCANS is not specified in the search request, the default value.	
L0136	Invalid Request for Subject Record	IDRR or NIDR cannot be provided for subject with non-blank AUD.	0			
L0137	Unable to Print Subject Record	Subject record cannot be printed due to restricted cycles.	0			

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0138	Unable to Print Subject Record	Subject record cannot be printed for the specified contributor due to restricted cycles.	0			
L0139	Extraneous Data	The file maintenance request contained data for %1 which is either not needed or not allowed in this context.	1	Field Name		
L0140	Invalid AUD Code Conversion Request	Active Want on file for this subject. Record cannot be converted from AUD P to AUD T.	1	FNU		
L0141	STOT/RET Discrepancy	Retention code must equal Y for an STOT of CNA.	0			
L0142	SLC Copy Failed	SLC Copy failed: %1 %2 %3.	0-3	Free Text	Free Text	Free Text
L0143	AFIS Storage Full for SLC Repository	SLC repository %1 is at max allotted storage capacity within AFIS; to add new subject, delete existing subject or contact the ITN Segment Administrator to allot more storage capacity.	1	NDR		
L0144	Field Relationship Error	The value of element %1 is inconsistent with the value of element %2.	2	Element Name	Element Name	
L0145	Invalid Ad Hoc Search Criterion	The Service Provider is not authorized to perform the type of Ad Hoc Subject Search requested, or the query contains a restricted term. Contact the ITN Segment Administrator to determine corrective action. (See note #8 above.)	0			
L0146	SLC File Not Offline	COPY_ALL_SLC failed. To copy an entire SLC file, the source and destination SLC files must be offline. Contact the AFIS Segment Administrator to take the file(s) offline.	0			
L0147	Contributor has remote capability	The contributing state has remote capability.	0			
L0148	Poor Latent Image Quality	The image quality is not adequate for conducting an AFIS search.	0			
L0149	Bad Search Criteria	The descriptive search criteria is not adequate or is incomplete.	0			
L0150	Unassigned FBI Number	Subject %1 may be in the FBI manual files, but does not exist in the Subject Criminal History File.	1	UCN		
L0151	Photo Not Available	Photo Not Available	0			
L0152	Photo Action on Improper AUD Code	CJIS cannot retrieve or delete the cited photo because the associated record is purged, expunged, not automated, deceased, or deleted.	0			
L0153	Photo Action on AUD C Record	CJIS cannot retrieve or delete the cited photo with FBI %1 because it has been consolidated with FBI %2.	2	UCN	UCN	
L0154	Improper Positions Specified	Multi-Latent investigative searches cannot process non-finger position codes.	0			
L0155	The palm image orientation is bad	The palm image orientation is too poor to permit processing	0			
L0156	The supplemental image orientation is bad	The supplemental image orientation is too poor to permit processing	0			
L0157	Failure in segmenting image	Failure in segmenting image	0			
L0158	Failure in validating secondary biometrics with fingerprints on file	Failure in validating secondary biometrics with fingerprints on file	0			
L0159	The palmprint imagery is incomplete	The palmprint imagery is incomplete	0			

**Table M-1 Transaction Messages**

Code	Message Title	Description	Count	Insert #1	Insert #2	Insert #3
L0160	The supplemental imagery is incomplete	The supplemental imagery is incomplete	0			
L0161	Invalid UCN for Delete operation	Deletion Request with invalid UCN %1	1	UCN		
L0162	Secondary Biometric Delete Error	Unable to delete biometric of type %1, biometric set identifier %2 for identifier %3	1	IMT	BSI	UCN
L0163	Secondary Biometric Enrollment Error	Unable to enroll biometric of type %1 for identifier %2	2	IMT	UCN	
L0164	Enrollment Request without Fingerprints (no MOU)	Enrollment Request without Fingerprints (no MOU)	0			
L0165	Fingerprint and Secondary Biometric Enrollment Failed Validation	Unable to enroll Fingerprints, secondary biometric enrollment was not attempted.	0			
L0166	Enrollment Failure due to 1-to-1 Fingerprint Verification	Enrollment failure, Fingerprints failed 1-to-1 verification with Fingerprints on file	0			
M0001	Unsolved Record Status	Unsolved record removed from unsolved repository				
M0002	Unsolved Record Status	Unsolved record retained in unsolved repository				
M0003	Unsolved Record Status	Unsolved record retained, requestor not owner				
M0004	Unsolved Record Status	Unsolved record retained, probe is unsolved				
M0005	Unauthorized Repository Access	Requestor search of repository %1 not authorized	1	NDR(s) (each applicable NDR value is listed separated by commas)		
M0006	Mix of Known and Unsolved Records	Request contains mix of Known and Unsolved records for search, the Unsolved records in repository %1 were not searched	1	NDR		
M0007	Mix of Known and Unsolved Records	Request contains mix of Known and Unsolved records for search, the Known records in repository %1 were not searched	1	NDR		
M0008	Caveat for Returning Matched Minutiae	This match was made using information beyond feature data	0			
M0009	Audit Trail Incomplete	Only latest 100 image disseminations are included, contact CJIS customer service for further audit information, or further limit the biometric audit trail request and resubmit.	0			
M0010	Additional Biometric Sets were deleted besides what is reported	The maximum number of deleted biometric sets for reporting has been exceeded, contact CJIS customer service for the remainder of the deleted records.	0			
M0011	Biometric Sample Quality Below Threshold	The %1 biometric for UCN %2 and BSI %3 has been enrolled but the biometric quality fails to meet NGI Minimum Image Quality Standards	3	IMT	UCN	BSI
M0012	Biometric Sample Failed Validation	The %1 biometric for UCN %2 has failed validation with Fingerprints on file and was not enrolled	2	IMT	UCN	
M0013	Enrollment Request without Fingerprints (no MOU)	The %1 biometric enrollment request had no accompanying Fingerprints (no MOU)	1	IMT		
M0014	Photo not Available	The requested photo is not available	0			

## **APPENDIX N: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-14 LOGICAL RECORDS**

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This appendix presents the descriptors and field specifications for Type-14 logical records, defined by ANSI-NIST-ITL as a Variable Resolution Fingerprint Image Record. In the past, only 4-4-2 slap impressions were allowed in the Type-14. NGI has expanded the use of the Type-14 to include available images as described in the ANSI/NIST-ITL. These new images consist of fingerprints (rolled and plain), supplemental palm prints and fingerprint images. Therefore it is necessary to add a new user-defined field to indicate the image set to which the image being transmitted belongs (e.g., are the rolled fingerprint impressions from a tenprint card or a palm print card). The new user-defined field, Image Source, is defined below. See Appendix P for a complete definition of each of the image sets. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description.

As NGI will be accepting images as defined in the ANSI/NIST-ITL, refer to the ANSI/NIST-ITL for complete definitions of the fields that are allowed in the Type-14. NGI will restrict the valid values for Friction Ridge Generalized Position (FGP 14.013) to 1 – 15, 19, and 40 – 50.

NIST Quality Metric (NQM 14.022) has been deprecated. CJIS users are required to populate the Fingerprint Quality Metric field (FQM 14.024) instead.

## Type-14 Data Dictionary

The T-14 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

### ISC 14.200 [Image Source Code](#)

<ebts:ImageSourceCode>

This optional numeric field indicates to which source the included image belongs. This field allows images from multiple biometric sets that use the same Record Type to be distinguishable.

ISC Code Values

Image Source	Value
Tenprint Fingerprint Set	1
Palmpoint Set – Front of Card (including fingers on front)	2
Palmpoint Set – Fingers on Back of Card	3
Supplemental Print Set	4

Two different values are used for the Palmpoint card to distinguish between the index finger image on the front of the card and the index finger that is part of the set of five finger images on the back of the card. Livescan palm capture should use value 2 and is not expected to contain any finger images.

### SLC 14.008 **Scale Units**

This field will be used to define image sampling frequency (pixel density). A value of “1” shall indicate pixels per inch. A value of “2” shall indicate pixels per centimeter. A value of “0” in this field indicates that no scale is provided, and NGI will reject transactions containing this value.

### FGP 14.013 **Friction Ridge Generalized Position**

<ansi-nist:FingerPositionCode>

This mandatory field indicates which friction ridge position is to be associated with the attached image of this record. NGI will restrict the valid values for Friction Ridge Generalized Position, FGP, 14.013, to 1 – 15, 19, and 40 – 50. When the value of '19' is present, then PPD, 14.014, and PPC, 14.015, must be present.



## Type-14 Data Dictionary

### PPD 14.014 Print Position Descriptors

*<ansi-nist:FingerprintImageMajorCasePrint>*

This field is mandatory when FGP, 14.013, is '19'.

This field will consist of two mandatory information items:

- The first is the probable integer finger position code (0-10) taken from finger position table.
- The second information item is the code taken from Table P-1, found in Appendix P, to indicate the portion of the EJI or tip image that is a part of the transaction.

### PPC 14.015 Print Position Coordinates

*<ansi-nist:MajorCasePrintSegmentOffset>*

This field is mandatory when FGP, 14.013, is '19'.

This field contains repeating sets of offsets to the locations for each of the full finger views within an EJI, and/or segments within a finger view. This field shall consist of six (6) mandatory information items to describe the type of image and its location within an EJI.

The first information item is the code for the full finger view, values 'FV1' to 'FV4', or the rolled finger tip, 'TIP'.

The second information item is used to identify the location of a segment within a full finger view stated in the first information item: 'PRX', 'DST', or 'MED' for the proximal, distal, or medial segment. If the bounding box will be representing a full

The third information item contains the left horizontal offset in pixels to the left edge of the bounding box relative to the origin position of the upper left corner of the image.

The fourth information item contains the right horizontal offset in pixels to the right edge of the bounding box relative to the origin position of the upper left corner of the image.

The fifth information item contains the top vertical offset (pixel counts down) to the top of The bounding box.

The sixth information item contains the bottom vertical offset in pixels from the upper left corner of the image down to the bottom of the bounding box.

The maximum occurrences of this field is 12. For EJI images, all finger segment (i.e. distal, medial, proximal) coordinates for all available finger views must be specified within the Type-14 record. Using this provided information, the finger views will be calculated at enrollment time as the rectangles encapsulating all segments from a particular finger view. This obviates the need for the contributor to explicitly specify the finger view coordinates. Please note that an EJI image from a thumb only has two segments - distal and proximal.

## Type-14 Data Dictionary

### **NQM 14.022 NIST Quality Metric.**

*<biom:FingerprintImageNISTQuality>*

This mandatory ASCII field shall contain the image quality scores for the individual fingers. Each finger score is defined by the FINGER NUMBER and the QUALITY SCORE separated by the  $U_s$  separator. Individual finger quality definitions are separated by the  $R_s$  separator. This field will be accepted for legacy users only. All new CJIS users will be required to populate the Fingerprint Quality Metric field (14.024 FQM).

### **FQM 14.024 Fingerprint Quality Metric.**

*<biom:FingerprintImageQuality>*

This ASCII field is used to specify one or more different metrics of fingerprint image quality score data for the image stored in this record. The meaning attributed to this metric must be defined and interpreted by the producer of the scoring algorithm or by the person or system used to assign the metric to the fingerprint image. The metric may be a predictor of AFIS matcher accuracy performance or a different metric to indicate a value associated with the quality of the fingerprint image for a particular function.

This field may contain one or more subfields, each consisting of four information items separated by the US separator character. The first information item is the finger number as chosen from Table 12 in the ANSI-NIST ITL 2007 Standard. The other three items identify a quality score and the algorithm used to create the quality score. This information is useful to enable the recipient of the quality score to differentiate between quality scores generated by different algorithms and adjust for any differences in processing or analysis as necessary.

1. The second information item shall be a quantitative expression of the predicted matching performance of the biometric sample. This item contains the ASCII representation of the integer image quality score between 0 and 100 assigned to the image data by a quality algorithm. Higher values indicate better quality. An entry of "255" shall indicate a failed attempt to calculate a quality score. An entry of "254" shall indicate that no attempt to calculate a quality score was made. The use of additional values to convey other information should be harmonized with ISO/IEC 19794 standards.
2. The third information item shall specify the integer value that is the ID of the vendor of the quality algorithm used to calculate the quality score. The IBIA shall maintain the Vendor Registry, which will map the value in this field to a registered organization.
3. The fourth information item shall specify a numeric product code assigned by the vendor of the quality algorithm, which may be registered with the IBIA, but registration is not required. It indicates which of the vendor's algorithms was used in the calculation of the quality score. This field contains the ASCII representation of the integer product code and should be within the range 1 to 65,535.

This subfield is repeated for each finger image and quality algorithm used, separated by the  $R_s$  character separator.

NOTE: If the FQM field is used to express a NIST Fingerprint Image Quality (NFIQ) score, the following formula should be used to calculate the proper FQM value:

$$FQM = (5 - NFIQ) * 25$$

This results in an NFIQ value of 1 being mapped to 100, and an NFIQ value of 5 being mapped to 0. For the product ID code, use '377D'.

## APPENDIX O: POB CODE TABLE

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Appendix O contains the codes for Place of Birth (POB 2.020) and Citizenship (CTZ 2.021) fields. The 'CTZ' contains an asterisk, '\*', for those codes that are valid for usage in the CTZ 2.021 field. All codes are valid for usage in the POB 2.020 field. The "DATE AHEAD FLAG" indicates those codes where the Date of Birth (DOB 2.022) may be a day ahead of North America time zone.

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**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
AA	*	Albania	
AB		Alberta (Canadian Province)	
AD	*	Andorra	
AE		Anguilla	
AF	*	Afghanistan	*
AG		Aguascalientes (Mexican State)	
AH		Ashmore/Cartier Islands	
AI	*	Antigua and Barbuda (formerly Antigua)	
AJ	*	Aruba	
AK		Alaska	
AL		Alabama	
AM		American Samoa (Islands)	
AN	*	Algeria	
AO	*	Angola	
AP	*	Armenia	
AQ	*	Azores Islands	
AR		Arkansas	
AS	*	Australia	*
AT	*	Argentina	*
AU	*	Austria	*
AV	*	Azerbaijan	
AX		Apache Tribe	
AZ		Arizona	
BA		Baja California (Northern Section) (Mexican State)	
BB	*	Barbados	*
BC		British Columbia (Canadian Province)	
BD	*	Bahamas, The	*
BE	*	Bahrain (Bahrein)	
BF		Bassas Da India	
BG	*	Belgium	*
BH	*	Belize (British Honduras)	
BI	*	Burundi	
BJ		Baja California (Southern Section) (Mexican State)	
BK		Baker Island	
BL	*	Bangladesh	
BM		Bermuda	
BN	*	Bhutan	
BO		British Indian Ocean Territory	
BP	*	Bosnia (Hercegovenia, for Reference only)	
BQ		Bouvet Island	
BR	*	Burma	*

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
BS	*	British Solomon Islands(Solomon Islands)	
BT	*	Botswana	
BU	*	Bulgaria	
BV	*	Bolivia	*
BW	*	Balearic Islands	
BX	*	Brunei	
BY	*	Belarus	
BZ	*	Brazil	*
CA		California	
CB	*	Colombia	
CC	*	Cuba	
CD	*	Canada	
CE		Campeche (Mexican State)	
CF	*	Chad	
CG		Caroline Islands	
CH		Chihuahua (Mexican Border State)	
CI		Chiapas (Mexican State)	
CJ	*	Cambodia (Kampuchea)	
CL		Colima (Mexican State)	
CM	*	Cameroon	
CO		Colorado	
CP		Cayman Islands	
CQ	*	Chile	*
CR	*	Costa Rica	
CS	*	Cyprus	*
CT		Connecticut	
CU		Coahuila (Mexican State)	
CV	*	Cape Verde Islands	
CW	*	Central African Republic	
CY	*	Ceylon (now Sri Lanka)	
CZ		Canal Zone (United States)	
DA		Cheyenne & Arapaho Tribes	
DB		Clipperton Island	
DC		Dist of Columbia	
DD		Cocos (Keeling) Islands	
DE		Delaware	
DF		Distrito Federal (Mexico, D.F.)	
DG	*	Comoros, Fed Islamic Rep	
DH	*	Benin (formerly Dahomey)	
DI	*	Cook Islands	
DJ		Coral Sea Islands	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
DK	*	Denmark	*
DL		Devils Lake Sioux Tribe	
DM	*	Dominica	
DN	*	Djibouti	
DO		Durango (Mexican State)	
DQ		Ak Chin Indian Community of Maricopa Indian Rsvn, AZ	
DP		Comanche Nation	
DR	*	Dominican Rep	*
DS		Miami Tribe	
DT		Muscogee (Creek Tribe)	
DV		Seneca-Cayuga Tribes	
DW		Citizen Potawatomi Nation	
DX		Alabama-Coushatta Tribes of TX	
DY		Alabama-Quassarte Tribal Town, OK	
DZ		Arapahoe Tribe of the Wind River Rsvn, WY	
EA		Aroostook Band of Micmac Indians of ME	
EB		Bay Mills Indian Community, MI	
EC		Blackfeet Tribe of the Blackfeet Indian Rsvn of MT	
ED		Burns Paiute Tribe of the Burns Paiute Indian Colony of OR	
EE		Absentee Shawnee	
EF		Cayuga Nation of NY	
EG		Cheyenne River Sioux Tribe of the Cheyenne River Rsvn, SD	
EH		Chickasaw Nation, OK	
EI		Chippewa-Cree Indians of the Rocky Boy's Rsvn MT	
EJ		Chitimacha Tribe of LA	
EK	*	Equatorial Guinea	
EL	*	El Salvador	
EN	*	England	*
EO	*	Ethiopia	
EP		Cocopah Tribe of AZ	
EQ		Coeur D'Alene Tribe of the Coeur D'Alene Rsvn, ID	
ER		Europa Island	
ES	*	Estonia	
ET	*	Eritrea	
EU	*	Ecuador	
EV		Colorado River Indian Tribe of CO River Indian Rsvn, AZ&CA	
EW		Confederated Tribes of the Chehalis Rsvn, WA	
EX		Confederated Tribes of the Colville Rsvn, WA	
EY	*	Egypt	*
EZ	*	Czech Republic	
FA		Falkland Islands	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
<b>FB</b>		Confederated Tribes of the Goshute RSVN, NV and UT	
<b>FC</b>		Fond du Lac	
<b>FD</b>	*	Finland	
<b>FE</b>		Confederated Tribes of the Umatilla Rsvn, OR	
<b>FF</b>		Confederated Tribes of the Warm Springs Rsvn of OR	
<b>FG</b>		French Guiana	
<b>FH</b>		Coushatta Tribe of LA	
<b>FJ</b>	*	Fiji Islands	
<b>FK</b>		Crow Creek Sioux Tribe of the Crow Creek Rsvn, SD	
<b>FL</b>		Florida	
<b>FM</b>		Crow Tribe of MT	
<b>FN</b>	*	France	*
<b>FO</b>	*	Faroe Islands	
<b>FP</b>	*	French Polynesia	
<b>FQ</b>		Eastern Band of Cherokee Indians of NC	
<b>FR</b>	*	Fr Southrn/Antartic Land	
<b>FS</b>	*	Fed States of Micronesia	
<b>FT</b>		Eastern Shosone Tribe WY	
<b>FU</b>		Ely Shosone Tribe of NV	
<b>FV</b>		Paiute-Shosone Tribe of the Fallon Rsvn and Colony, NV	
<b>FX</b>		Sac and Fox	
<b>FY</b>		Fort Belknap Indian Community of Fort Belknap Rsvn of MT	
<b>FZ</b>		Fort McDowell Yavapai Nation, AZ	
<b>GA</b>		Georgia	
<b>GB</b>	*	Gabon	
<b>GC</b>	*	Greece	*
<b>GD</b>	*	Georgia/Gruzinskaya	
<b>GE</b>	*	Germany (Also see EM and WG)	*
<b>GF</b>		Guernsey	
<b>GG</b>	*	Ghana	
<b>GI</b>	*	Guinea	
<b>GJ</b>	*	Grenada	
<b>GK</b>	*	Gambia	
<b>GM</b>		Guam	*
<b>GN</b>	*	Greenland	
<b>GO</b>		Glorioso Islands	
<b>GP</b>		Guadeloupe	
<b>GQ</b>		Fort Mojave Indian Tribe of AZ, CA & NV	
<b>GR</b>		Guerrero (Mexican State)	
<b>GS</b>	*	S Georgia/S Sandwich Isl	
<b>GT</b>	*	Guatemala	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
GU		Guanajuato (Mexican State)	
GV		Assiniboine and Sioux Tribes of Fort Peck Indian Rsvn, MT	
GX		Gila River Indian Community of Gila River Indian Rsvn, AZ	
GY	*	Guyana (Includes French Guiana)	
GZ	*	Gaza	
HB		Grand Traverse Band of Ottawa and Chippewa Indians, MI	
HD	*	Honduras	
HE		Heard Isl/McDonald Isl	
HF		Hannahville Indian Community, MI	
HG		Havasupai Tribe of the Havasupai Rsvn, AZ	
HI		Hawaii	
HJ		Hoh Indian Tribe of the Hoh Indian Rsvn, WA	
HK	*	Hong Kong	*
HL		Hidalgo (Mexican State)	
HM		Hopi Tribe of Arizona	
HN	*	New Hebrides (now Vanuata)	
HO		Howland Island	
HP		Hualapai Indian Tribe of Hualapai Indian Rsvn, AZ	
HQ		Iowa Tribe of KS & NB	
HR		Christmas Island	
HS		Saint Helena	
HT	*	Haiti	
HU	*	Hungary	
HW		Jamestown S' Klallam Tribe of WA	
HX		Jena Band Choctaw Indians, LA	
HZ		Jicarilla Apache Nation, NM	
IA		Iowa	
IB		Man, Isle of	
IC	*	Iceland	
ID		Idaho	
IE	*	Ireland	
IF		Kaibab Band of Paiute Indians of the Kaibab Indian Rsvn, AZ	
IG		Kalispel Indian Community of Kalispel Indian Rsvn WA	
IH		Kaw Nation, OK	
II	*	India	*
IK		Keweenaw Bay Indian Community, MI	
IL		Illinois	
IM		Madeira Islands	
IN		Indiana	
IO	*	Indonesia	
IQ	*	Iraq	



**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
IR	*	Iran	
IS	*	Israel	
IT	*	Italy	*
IU	*	Niue	
IV		Kickapoo Tribe of Indians of the Kickapoo Rsvn in KS	
IW		Iowa Tribe	
IX		Menominee Indian Nation	
IY	*	Cote d'Ivoire (Ivory Coast)	
IZ		Kotenai Tribe of ID	
JA	*	Japan	*
JB		Lac Vieux Desert Band of Lake Superior Chippewa Indians, MI	
JD		Little River Band of Ottawa Indians, MI	
JE		Jersey	
JF		Little Traverse Bay Bands of Odawa Indians, MI	
JG		Lovelock Paiute Tribe of the Lovelock Indian Colony, NV	
JH		Lower Brule Sioux Tribe of the Lower Elwha Rsvn, WA	
JI		Johnston Island	
JJ		Lower Elwha Tribal Community of the Lower Elwha Rsvn, WA	
JK		Lummi Tribe of the Lummi Rsvn, WA	
JL		Jalisco (Mexican State)	
JM	*	Jamaica	*
JN		Jan Mayen	
JO	*	Jordan	
JP		Makah Indian Tribe of the Makah Indian Rsvn, WA	
JQ		Mashantucket Pequot Tribe of CT	
JR		Jarvis Island	
JS		Match-E-Be-Nash-She-Wish Band of Pottawatomie Indians of MI	
JT		Mescalero Apache Tribe of the Mescalero Rsvn, NM	
JU	*	Juan de Nova Island	
JV		Metlakatla Indian Community, Annette Island AK	
JW		Miccosukee Tribe of Indians, FL	
JX		Mississippi Band of Choctaw Indians	
JY		Muckleshoot Indian Tribe of the Muckleshoot Rsvn, WA	
JZ		Narragansett Indian Tribe of RI	
KB	*	Gilbert Islands (now Kiribati)	
KC	*	Croatia	
KD		Navajo Nation, AZ, NM and UT	
KE	*	Kenya	
KF		Nez Perce Tribe, ID (Fmrly Listed Nez Perce Tribe of ID)	
KG		Nisqually Indian Tribe of the Nisqually Rsvn, WA	
KH	*	Manahiki Island	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
KI		Kingman Reef	
KJ		Nooksack Indian Tribe of Washington	
KK		Kickapoo Tribe	
KL		Northern Cheyenne Tribe of the North. Chey. Indian Rsvn, MT	
KM		Nottawaseppi Huron Band of Potawatomie, MI- Frmr Hur. Pot., Inc.	
KN	*	North Korea	*
KO	*	South Korea	*
KP		Shakopee	
KQ		Ohkay Owingeh, NM (Formerly the Pueblo of San Juan)	
KS		Kansas	
KT	*	Kazakhstan	
KU	*	Kuwait	
KV	*	Kosovo	
KW		Kiowa	
KX		Omaha Tribe of NB	
KY		Kentucky	
KZ	*	Kyrgyzstan	
LA		Louisiana	
LB	*	Liberia	
LC		Mille Lacs	
LD	*	Moldova	
LE	*	Lesotho	
LF	*	Slovakia	
LG		Onondaga Nation of NY	
LH	*	Lithuania	
LI	*	Liechtenstein	
LJ		Pascua Yaqui Tribe of AZ	
LK		Passamaquoddy Tribe of ME	
LL		Leech Lake Band of Chippewa	
LM		Penobscot Tribe of ME	
LN	*	Lebanon	
LO	*	Slovenia	
LP		Lac du Flambeau	
LQ		Poarch Band of Creek Indians of AL	
LR		Pokagon Band of Potawatomi Indians, MI & IN	
LS	*	Laos	*
LT	*	Latvia	
LU	*	Saint Lucia	
LV		Port Gamble of Indian Community of the Port Gamble Rsvn, WA	
LW		Prairie Band of Potawatomi Nation, KS	
LX	*	Luxembourg	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
LY	*	Libya	
LZ		Pueblo of Acoma, NM	
MA		Massachusetts	
MB		Manitoba (Canadian Province)	
MC		Michoacan (Mexican State)	
MD		Maryland	
ME		Maine	
MF	*	Malawi	
MG	*	Mongolia	
MH		Marshall Islands	
MI		Michigan	
MJ	*	Monaco	
MK		Mariana Islands (U.S. Trust Territory-U.S.)	
ML	*	Mali	
MM	*	Mexico	
MN		Minnesota	
MO		Missouri	
MP	*	Madagascar (included in Malagasy Republic)	
MQ	*	Morocco	
MR		Morelos (Mexican State)	
MS		Mississippi	
MT		Montana	
MU	*	Mauritania	
MV	*	Maldives	
MW		Midway Islands	
MX		Mexico (Mexican State)	
MY	*	Malta	
MZ	*	Malaysia	*
NA		Nayarit (Mexican State)	
NB		Nebraska	
NC		North Carolina	
ND		North Dakota	
NE	*	Holland (Netherlands)	*
NF	*	Newfoundland (Includes Labrador; Canadian Province)	
NG	*	Nigeria	*
NH		New Hampshire	
NI		Northern Ireland	
NJ		New Jersey	
NK		New Brunswick (Canadian Province)	
NL		Nuevo Leon (Mexican State)	
NM		New Mexico	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
NN	*	Niger	
NO	*	New Guinea (now Papua New Guinea)	
NP	*	Nepal	
NQ		New Caledonia	
NR	*	Nauru	
NS		Nova Scotia (Canadian Province)	
NT		Northwest Territories (Canadian Admin. Division)	
NU	*	Nicaragua	
NV		Nevada	
NW	*	Norway	
NX	*	Bonaire (Netherlands Antilles)	
NY		New York	
NZ	*	New Zealand	
OA		Oaxaca (Mexican State)	
OB		Pueblo of Cochiti, NM	
OC	*	Macao (Macau)	
OD		Pueblo of Isleta, NM	
OE		Pueblo of Jemez, NM	
OF		Norfolk Island	
OG		Osage Nation	
OH		Ohio	
OI		Okinawa	
OJ		Pueblo of of Laguna, NM	
OK		Oklahoma	
OL		Pueblo of Nambe, NM	
OM	*	Oman	
ON		Ontario (Canadian Province)	
OO		Otoe-Missouria Tribe	
OP		Pueblo of Picuris, NM	
OQ		Pueblo of San Felipe, NM	
OR		Oregon	
OS		Oglala Sioux	
OT		Oneida Tribe of Indians of Wisconsin	
OU		Pueblo of San Ildefonso, NM	
OV		Pueblo of Sandia, NM	
OW		Pueblo of Santa Ana, NM	
OX		Pueblo of Santa Clara, NM	
OY		Kewa Pueblo, NM (Formerly Pueblo of Santa Domingo, NM)	
OZ		Oneida Nation of NY	
PA		Pennsylvania	
PB		Puebla (Mexican State)	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
PC		Pitcairn, Henderson, Ducie, and Oeno Island	
PD	*	Republic of Palau	
PE		Prince Edward Island (Canadian Province)	
PF	*	Paracel Islands	
PG	*	Guinea-Bissau (formerly Portuguese Guinea)	
PH		Pueblo of Taos, NM	
PI	*	Philippines	*
PJ		Pueblo of Tesuque, NM	
PK	*	Pakistan	*
PL		Palmyra Atoll	
PM	*	Panama	
PN		Ponca Tribe	
PO	*	Poland	
PP		Pueblo of Zia, NM	
PQ		Quebec (Canadian Province)	
PR	*	Puerto Rico	*
PS		St Pierre and Miquelon	
PT	*	Portugal	
PU	*	Peru	
PV	*	Paraguay	*
PW		Pawnee Tribe	
PX		Pueblo of Zuni, NM	
PY		Puyallup Tribe of the Puyallup Rsvn, WA	
PZ		Pyramid Lake Paiute Tribe of the Pyramid Lake Rsvn, NV	
QA	*	Qatar	
QB		Quechan Tribe of the Fort Yuma Indian Rsvn CA & AZ	
QC		Quileute Tribe of the Quileute Rsvn, WA	
QD		Quinault Tribe of the Quinault Rsvn, WA	
QE		Reno-Sparks Indian Colony, NV	
QF		Rosebud Sioux Tribe of the Rosebud Indian Rsvn, SD	
QG		Sac and Fox Nation of Missouri in KS and NB	
QH		Sac and Fox Tribe of the MS in IA	
QI		Saginaw Chippewa Indian Tribe of MI	
QJ		St Regis Mohawk Tribe, NY- Frmr St Reg. Band Mohawk Indians	
QK		Salt River Pima-Maricopa Indian Comm. Of Salt River Rsvn, AZ	
QL		Samish Indian Tribe, WA	
QM		San Carlos Apache Tribe of the San Carlos Rsvn, AZ	
QN		Santee Sioux Nation, NB	
QO		Sauk- Suiattle Indian Tribe of WA	
QP		Sault Sainte Maire Tribe of Chippewa Indians of MI	
QQ		Seminole Tribe of FL-Dan, Big Cyp, Brghn, Hllywd & Tmp Rsvns	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
QR		Quintana Roo (Mexican State)	
QS		Seneca Nation of New York	
QT		Shoalwater Bay Tribe of the Shoalwater Bay Indian Rsvn, WA	
QU		Queretaro (Mexican State)	
QV		Shosone-Bannock Tribes of the Fort Hall Rsvn of ID	
QW		Shosone-Paiute Tribes of the Duck Valley Rsvn of NV	
QX		Sisseton-Wahpeton Oyate of the Lake Traverse Rsvn, SD	
QY		Skokomish Indian Tribe of the Skokomish Rsvn, WA	
QZ		Skull Valley Band of Goshute Indians of UT	
RA	*	Russia	
RB	*	Republic of Congo, Brazzaville	
RC	*	Peoples Republic of China	*
RD		Snoqualmie Tribe, WA	
RE		Reunion	
RF		Russian Federation	*
RG		Gibraltar	
RH	*	Rhodesia (now Zimbabwe)	
RI		Rhode Island	
RJ		Southern Ute Indian Tribe of CO	
RK		Spirit Lake Tribe of the Spokane Rsvn, WA	
RL		Red Lake	
RM		Spokane Tribe of the Spokane Rsvn, WA	
RN		Squaxin Island Tribe of Squaxin Island Rsvn, WA	
RO		Standing Rock Sioux Tribe of North&South Dakota	
RP		Summit Lake Paiute Tribe of NV	
RQ		Suquamish Indian Tribe of the Port Madison Rsvn, WA	
RR		Montserrat	
RS	*	Spanish Sahara (now Western Sahara)	
RT		Swinomish Indians of the Swinomish Rsvn, WA	
RU	*	Romania/Rumania	
RV	*	Socialist Republic of Vietnam	*
RW	*	Rwanda	
RX		Te-Moak Tribe of W. Shosone Indians of NV	
RY	*	Republic of Yemen	
RZ		Three Affiliated Tribes of the Fort Berthold Rsvn, ND	
SA	*	Sierra Leone	
SB	*	Saudi Arabia	
SC		South Carolina	
SD		South Dakota	
SE	*	Seychelles	
SF	*	South Africa	*

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
SG	*	Senegal	
SH	*	San Marino	
SI		Sinaloa (Mexican State)	
SJ	*	South-Wst Africa (Namibia)	
SK		Seminole Nation	
SL		San Luis Potosi (Mexican State)	
SM	*	Somalia	
SN		Saskatchewan (Canadian Province)	
SO		Sonora (Mexican State)	
SP	*	Spain	*
SQ	*	Sweden	
SR	*	Singapore	*
SS	*	Scotland	
SU	*	Sudan	
SV		Svalbard	
SW	*	Swaziland	
SX	*	Soviet Union (USSR/Russia)	
SY	*	Syria	
SZ	*	Switzerland	*
TA		Tamaulipas (Mexican State)	
TB		Tabasco (Mexican State)	
TC	*	Trucial States (now United Arab Emirates)	
TD		Trust Territory of Pacific Islands	
TE	*	Spratly Islands	
TF	*	Tuamontu Archipelago	
TG	*	Tonga	
TH	*	Thailand	*
TJ	*	Tajikistan	
TK		Tokelau	
TL		Tlaxcala (Mexican State)	
TM		Tromelin Island	
TN		Tennessee	
TO	*	Togo	
TP	*	Sao Tome and Principe	
TQ	*	Tongareva	
TR	*	Turks and Caicos Islands	
TS	*	Nevis and Saint Christopher Kitts	
TT	*	Trinidad / Tobago	*
TU	*	Tunisia	
TV	*	Ellice Islands (now Tuvalu)	
TW	*	Taiwan, Republic of China	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
TX		Texas	
TY	*	Turkey	*
TZ	*	Tanzania, United Republic of	
UB		Tohono O'ODham Nation of AZ	
UC		Turtle Mt Bnd of Chipewa	
UD		Tonawanda Band of Seneca Indians of NY	
UE		Tonkawa Tribe of Indians of OK	
UF		Tonto Apache Tribe of AZ	
UG	*	Uganda	
UH		Tulalip Tribes of the Tulalip Rsvn, WA	
UI		Yunica-Biloxi Indian Tribe of LA	
UJ		Tuscarora Nation of NY	
UK	*	Ukraine	
UL		Upper Skagit Indian Tribe of WA	
UM	*	Mauritius	
UN	*	United Kingdom	*
UO		Ute Indian Tribe of the Uintah & Ouray Rsvn, UT	
UP		Ute Mountain Tribe of the Ute Mountain Rsvn, CO, NM & UT	
UQ		Walker River Paiute Tribe of the Walker River Rsvn, NV	
UR	*	Turkmenistan	
US	*	United States	*
UT		Utah	
UU		Wampanoag Tribe of Gay Head (Aquinnah) of MA	
UV	*	Burkina Faso/Upper Volta	
UW		Washoe Tribe of NV&CA-Carson, Drsslrvtll,Woodfrds, Stewrt, Wash	
UX		White Mountain Apache Tribe of the Ft Apache Rsvn, AZ	
UY	*	Uruguay	
UZ	*	Uzbekistan	*
VA		Virginia	
VB		British Virgin Islands	
VC		Veracruz (Mexican State)	
VD		Winnebago Tribe of NB	
VE		Wyandotte Nation, OK	
VF		Vakama Nation, OK	
VG		Yakton Sioux Tribe of SD	
VH		Yavapai-Apache Nation of the Camp Verde Indian Rsvn, AZ	
VI		U S Virgin Islands	*
VJ		Yavapai-Prescott Tribe of the Yavapai Rsvn, AZ	
VK		Yerington Paiute Tribe of Yerington Colony&Cambell Rnch, NV	
VL		Navassa Island	
VO		Yomba Shosone Tribe of the Yomba Rsvn, NV	



**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
VP		Catawba Indian Nation, SC (AKA Catawba Tribe of SC)	
VQ		Confederated Salish&Kootenai Tribes of the Flathead Rsvn, MT	
VR		Conf. Tribes of the Coos, Lower Umpqua and Siuslaw Indians of OR	
VT		Vermont	
VU		Confederated Tribes of the Grand Ronde Community of OR	
VV	*	St. Vincent and the Grenadines	
VW		Confederated Tribes of Siletz Indians-OR(Conf. Tribes Siletz Rsvn)	
VX		Confederated Tribes & Bands of the Yakama Nation, WA	
VY		Vatican City	
VZ	*	Venezuela	*
WA		Washington	
WB	*	West Bank	
WC		Coquille Tribe of OR	
WD		Wyandotte Tribe	
WE		White Earth	
WF		Wallis and Futuna	
WH		Cow Creek Band of Umpqua Indians of OR	
WI		Wisconsin	
WJ		Cowlitz Indian TRIBE< WA	
WK		Wake Island	
WL	*	Wales	
WM		Duckwater Shosone Tribe of the Duckwater Rsvn, NV	
WN	*	West Indies	
WO		Forest County Potawatomi Community of WI	
WP		Fort McDermitt Paiute& Shosone Tribes of F.M. Indians Rsvn, NV & OR	
WQ		Fort Sill Apache Tribe of OK	
WR		Houlton Band of Maliseet Indians of ME	
WS	*	Western Samoa	
WT		Wichita Tribe	
WU		Kickapoo Traditional Tribe of TX	
WV		West Virginia	
WX		Klamath Tribes, OR	
WY		Wyoming	
WZ		Lac Courte Oreilles Band of Lake Superior Chippewa Indians, WI	
XA	*	Serbia	
XB	*	Montenegro	
XC		Bad River Band of Lake Superior Tribe of Chippewa Indians	
XD		Caddo Tribe	
XE		Cherokee Nation	

**Table O-1 POB Code Table**

CODE	CTZ	DESCRIPTION	DATE AHEAD FLAG
XF		Delaware Nation	
XG		Eastern Shawnee Tribe	
XH		Modoc Tribe	
XI		Ottawa Tribe	
XJ		Peoria Tribe	
XK		Quapaw Tribe	
XL		United Keetoowah Band of Cherokee Indians	
XM		Western Delaware Tribe	
XN		Nunavut (Canadian Territory)	
XO		Grand Portage Band of Lake Superior Chippewa	
XP		Bois Forte Band of Chippewa	
XQ		Delaware Tribe of OK	
XR		Las Vegas Tribe of Paiute Indians of Las Vegas Indian Clny, NV	
XS		Lower Sioux Indian Community in the State of MN	
XT		Mashpee Wampanoag Tribe of MA	
XU		Minnesota Chippewa Tribe, MN	
XV		Moapa Band of Paiute Indians of NV	
XW		Mohegan Indian Tribe of CT	
XX	*	Unknown	
XZ		Paiute Indian Tribe of UT	
YB		Ponca Tribe of NB	
YC		Prairie Band of Potawatomi Nation, KS	
YD		Prairie Island Indian Community in the State of MN	
YE	*	Yemen Arab Republic	
YF		Pueblo of Pojoaque, NM	
YG	*	Yugoslavia	
YH		Red Cliff Band of Lake Superior Chippewa Indians WI	
YO	*	Mayotte	
YT		Yukon (Canadian Territory)	
YU		Yucatan (Mexican State)	
YY	*	Unlisted country (Any foreign country not included in the list)	
YZ		Northwestern Band of Shosoni Nation of UT (Washakie)	
ZA		Zacatecas (Mexican State)	
ZB	*	Martinique	
ZC	*	Suriname	
ZD	*	Macedonia	
ZE		Kialegee Tribe Town, OK	
ZI	*	Canary Islands	
ZM	*	Zambia	
ZO	*	Mozambique	
ZR	*	Congo Kinshasa (now Zaire)	

**Table P-2 Friction Ridge Generalized Position Codes**

Position/Portion **	Type	Record Type	Code	Max Width		Max Length	
				(mm)	(in)	(mm)	(in)
Unknown Finger, Search 0 – 17	U	9, 13	0	40.6	1.6	38.1	1.5
Right thumb	F/M	4, 9, 13, 14	1	40.6	1.6	38.1	1.5
Right index finger	F/M	4, 9, 13, 14	2	40.6	1.6	38.1	1.5
Right middle finger	F/M	4, 9, 13, 14	3	40.6	1.6	38.1	1.5
Right ring finger	F/M	4, 9, 13, 14	4	40.6	1.6	38.1	1.5
Right little finger	F/M	4, 9, 13, 14	5	40.6	1.6	38.1	1.5
Left thumb	F/M	4, 9, 13, 14	6	40.6	1.6	38.1	1.5
Left index finger	F/M	4, 9, 13, 14	7	40.6	1.6	38.1	1.5
Left middle finger	F/M	4, 9, 13, 14	8	40.6	1.6	38.1	1.5
Left ring finger	F/M	4, 9, 13, 14	9	40.6	1.6	38.1	1.5
Left little finger	F/M	4, 9, 13, 14	10	40.6	1.6	38.1	1.5
Plain right thumb	F/M	4, 9, 13, 14	11	25.4	1	50.8	2
Plain left thumb	F/M	4, 9, 13, 14	12	25.4	1	50.8	2
Plain right four fingers	F/M	4, 9, 13, 14	13	81.3	3.2	76.2	3
Plain left four fingers	F/M	4, 9, 13, 14	14	81.3	3.2	76.2	3
Left and Right thumbs	F/M	4, 9, 13, 14	15	81.3	3.2	76.2	3
Right Extra Digit	F/M	9, 13, 14	16	40.6	1.6	38.1	1.5
Left Extra Digit	F/M	9, 13, 14	17	40.6	1.6	38.1	1.5
Unknown Friction Ridge, search all possible codes	U	9, 13	18	139.7	5.5	213	8.5
EJI or Tip	S	9, 13, 14	19	114	4.5	127	5
Unknown Palm, Searching 21 - 38	U	9, 13	20	139.7	5.5	203.2	8
Right Full Palm	P	9, 13, 15	21	139.7	5.5	203.2	8
Right Writer's Palm	P	9, 13, 15	22	44.5	1.8	127	5
Left Full Palm	P	9, 13, 15	23	139.7	5.5	203.2	8
Left Writer's Palm	P	9, 13, 15	24	44.5	1.8	127	5
Right Lower Palm	P	9, 13, 15	25	139.7	5.5	139.7	5.5
Right Upper Palm	P	9, 13, 15	26	139.7	5.5	139.7	5.5
Left Lower Palm	P	9, 13, 15	27	139.7	5.5	139.7	5.5
Left Upper Palm	P	9, 13, 15	28	139.7	5.5	139.7	5.5
Right Other ( <i>Unknown Right hand</i> ) Searching Right hands between 21 – 38	U	9, 13	29	139.7	5.5	203.2	8
Left Other ( <i>Unknown Left hand</i> ) Searching Left hands between 21 - 38	U	9, 13	30	139.7	5.5	203.2	8
Right Interdigital	P	9, 13, 15	31	139.7	5.5	76.2	3
Right Thenar	P	9, 13, 15	32	76.2	3	114.3	4.5
Right Hypothenar	P	9, 13, 15	33	76.2	3	114.3	4.5
Left Interdigital	P	9, 13, 15	34	139.7	5.5	76.2	3
Left Thenar	P	9, 13, 15	35	76.2	3	114.3	4.5
Left Hypothenar	P	9, 13, 15	36	76.2	3	114.3	4.5
Right Grasp	P	9, 13, 15	37	139.7	5.5	203.2	8
Left Grasp	P	9, 13, 15	38	139.7	5.5	203.2	8
Right Carpal Delta Area	P	9, 13, 15	81	139.7	5.5	114.3	4.5
Left Carpal Delta Area	P	9, 13, 15	82	139.7	5.5	114.3	4.5
Right full palm, including writer's palm	P	9, 13, 15	83	139.7	5.5	114.3	4.5
Left full palm, including writer's palm	P	9, 13, 15	84	139.7	5.5	114.3	4.5
Right index/middle	M	14	40	40.6	1.6	38.1	1.5
Right middle/ring	M	14	41	40.6	1.6	38.1	1.5
Right ring/little	M	14	42	40.6	1.6	38.1	1.5
Left index/middle	M	14	43	40.6	1.6	38.1	1.5

**Table P-2 Friction Ridge Generalized Position Codes**

Position/Portion **	Type	Record Type	Code	Max Width		Max Length	
				(mm)	(in)	(mm)	(in)
Left middle/ring	M	14	44	40.6	1.6	38.1	1.5
Left ring/little	M	14	45	40.6	1.6	38.1	1.5
Right index/Left index	M	14	46	40.6	1.6	38.1	1.5
Right index/middle/ring	M	14	47	63.5	2.5	38.1	1.5
Right middle/ring/little	M	14	48	63.5	2.5	38.1	1.5
Left index/middle/ring	M	14	49	63.5	2.5	38.1	1.5
Left middle/ring/little	M	14	50	63.5	2.5	38.1	1.5

F – Fingerprint

M – Mobile ID

P – Palmprint

S – Supplemental Print

U – Unknown Print

\*\* Shaded rows are considered 'Future Capability'.

## APPENDIX P: SPECIFICATIONS FOR TRANSMITTING PALM PRINTS AND SUPPLEMENTAL FINGERPRINTS

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This appendix presents transmission specifications for Type-14 and Type-15 logical records. The Type-14 image records contain variable resolution supplemental fingerprint image data and the Type-15 image records contain variable resolution palm print image data together with fixed and user-defined textual information fields pertinent to the digitized image. The scanning resolution is not specified for these record types. However, in all cases the scanning resolution used to capture the supplemental and a palm print image shall be at least as great as the minimum scanning resolution of 19.69 ppm (500 ppi) as specified in Section 3.8.4 of this main document

When submitting supplemental fingerprints and palm prints to CJIS in the Type-14 record, the Entire Joint Image (EJI) image should contain at least the full FV1 or FV3 image along with the corresponding coordinates to be used in the verification process of the fingerprints submitted. “Best Practice” for submitting supplemental fingerprints would be to submit the complete EJI image that includes FV1, FV2, FV3, and FV4 as defined in Table P-1. The complete description of the Type-14 and Type-15 record fields can be found in the ANSI/NIST-ITL standard.

Because not all friction ridge areas of the hand have overlap with the distal segment of the fingers (i.e., writer’s palm, interdigital, thenar, lower palm, hypothenar), it is not possible for CJIS to positively verify that these friction ridge areas correspond to the associated identity. CJIS will attempt to segment the distal area of applicable palm and supplemental prints (i.e. full palm, upper palm, joints) that can be compared to the subject fingerprints. If segmentation is successful and the subsequent 1:1 verification fails, then all palm and supplemental records submitted within the transaction will be rejected as possibly being from the incorrect subject. If the distal segmentation is not possible, CJIS will enroll the submitted palm and/or supplemental prints without having performed 1:1 verification, based on the assumption that the contributing agency is confident that the palm and/or supplemental prints correspond with the identity associated with the fingerprints.

“Best Practice” for submitting palm prints in the Type-15 record will include either:

1. two full palm prints with the corresponding two writer’s palms, or
2. an upper and lower palm from each hand with the corresponding two writer's palms.

When submitting palm prints, the submission could also include rolled thenar, hypothenar, and grasp from each hand. The expectation with the receipt of known-subject palm prints is that the submitting agency has verified the palm print and/or supplemental with the subject’s corresponding fingerprints. The complete description of the Type-15 record fields can be found in ANSI/NIST-ITL.

The entire area of the full palm is defined as that area extending from the carpal delta area to the tips of the fingers and can be represented as one or two scanned images. If two images are used to represent the full palm, the lower image shall extend from the carpal delta area to the top of the interdigital area (third finger joint) and shall include the thenar, and hypothenar areas of the

palm. The upper image shall extend from the bottom of the interdigital area to the upper tips of the fingers. This provides an adequate amount of overlap between the two images to facilitate subject verification. By matching the ridge structure and details contained in the common interdigital area, an examiner can confidently state that both images came from the same palm.

Tenprint Identification submissions may include palm print and supplemental fingerprint and palm print cards. When submitting to the FBI as hard-copies, best practices for this collection of prints are defined as one FBI Standard Fingerprint Card FD-249 or FD-258 (Figure P-1), two FBI Standard Palm Print Cards FD-884 (Figure P-2 and P-3), and two FBI Standard Supplemental Finger/Palm Print Cards FD-884a (Figure P-4 and P-5), for a total of five cards per subject. In order to clarify expected orientation within each designated field, the FD-884 and FD-884a were minimally revised on July 2, 2010, to ensure that a 'tips toward text' capture is apparent and consistently utilized. While the FBI CJIS Division will no longer routinely accept hard-copy biometric submissions after April 15, 2012, the standard card equivalents are noted here for users that continue to use the FBI standard cards to support capture/scanning within their individual programs. ANSI/NIST-ITL provides the Friction Ridge Generalized codes (FGP) and maximum image sizes, see Table P-2.

### **Major Case Print Collection**

FBI defines the Major Case Print Collection as a complete set of friction ridge exemplars that include:

- Ten rolled fingerprints (Type-4 for 500ppi or Type-14 for 1000ppi and above as captured on an FD-249 or FD-258)
- Standard four finger slaps for right and left hand in a Type-4/Type-14 record (FGP = 13 and 14 as captured on an FD-249 or FD-258)
- Individual thumb slaps for right and left hand in a Type-4/Type-14 record (FGP = 11 and 12 as captured on an FD-249 or FD-258)
- Tips of each finger in a Type-14 record (FGP = 19, Print Position Descriptors [14.014] = 'TIP' as captured on an FD-884a)
- Entire joint image for each finger in a Type-14 record (FGP = 19, Print Position Descriptors [14.014] = 'EJI' as captured on an FD-884a)
  - Rolled joint, flat left, center, and right full finger for each finger in a Type-14 record (FGP = 19, Print Position Descriptors [14.014] = 'FV1' and 'FV2' and 'FV3' and 'FV4')
- Rolled Thenar for each hand in a Type-15 record (FGP = 32 and 25 as captured on an FD-884a)
- Full Palm for each hand in a Type-15 record (FGP = 21 and 23 as captured on an FD-884)
- Writer's Palm for each hand in a Type-15 record (FGP = 22 and 24 as captured on an FD-884)
- Five rolled fingerprints for each hand (Type-4 for 500ppi or Type-14 for 1000ppi and above as captured on an FD-884)

## **Fingerprint Image Sets**

A full Tenprint Fingerprint image set consists of one of the following four options:

- 14 Type-4 Fingerprint image records (from the FD-249 or FD-258 card or a scanned equivalent)
  - Ten Rolled Fingerprint images
  - Two Four Finger Slap Fingerprint images
  - Two Flat Thumb Fingerprint images
- 3 Type-14 Fingerprint image records (identification flat images)
  - Two Four Finger Slap Fingerprint images
  - One Two-Thumb Slap Fingerprint image
- 13 Type-14 Fingerprint image records (Introduced for RPIS)
  - Ten Rolled or Ten Flat Fingerprint images
  - Two Four Finger Slap Fingerprint images
  - One Two-Thumb Slap Fingerprint image
- 14 Type-14 Fingerprint image records (Introduced for RPIS)
  - Ten Rolled or Ten Flat Fingerprint images
  - Two Four Finger Slap Fingerprint images
  - Two Flat Thumb Fingerprint images

IAFIS supports Fingerprint Image Sets 1 and 2, where NGI supports all four Fingerprint image sets defined above. To be considered a full Tenprint set, all images must be present or a designation that each missing finger is either amputated or unprintable is required. CJIS prefers that contributors submit 1000ppi images with the Type-14.

## **Palm Print Image Sets**

A Palm Print image set consists of all of the image blocks from an FD-884 card or a scanned equivalent. Each FD-884 card has images for one hand, so a Palm Print image set with images for both hands contains:

1-8 Type-15 Palm Print image records

- One Writer's Palm image from each hand
- Either
  - One Full Palm image from each hand

Or

- One Upper Palm image and one Lower Palm image from each hand

Or

- One Palm Thenar Area image, one Palm Hypothenar Area image, and one Palm Interdigital Area image from each hand

0-12 Type-14 Fingerprint image records

- Five individual finger images from the back of the FD-884 card from each hand
- One individual index finger image from the front of the FD-884 card from each hand

At least one palm image must be given but as the fingerprint images are optional, no amputation or unprintable flags are needed for these records. Although the Type-14 Fingerprint Images will be accepted by NGI, they are reserved as a future capability, and will not be used for searching or enrollment at this time.

### Supplemental Print Image Sets

A Supplemental Print image set consists of all of the image blocks from an FD-884a card or a scanned equivalent. Each FD-884a card has images for one hand, so a Supplemental Print image set with images for both hands contains:

0-20 Type-14 Fingerprint image records

- 5 Entire Joint Image (EJI) Fingerprint images from each hand
- 5 Finger Tip Fingerprint images from each hand

0-2 Type-15 Palm Print image records

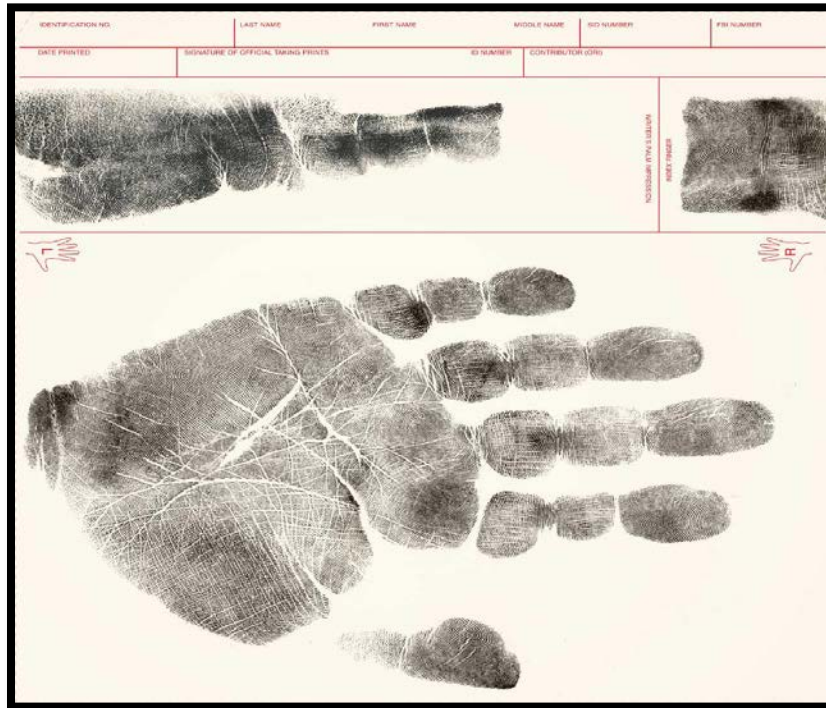
- 1 Thenar Region Palm Print image from each hand

While both finger and palm are listed as optional, at least one image must be given to be accepted. With optional fingerprint images, no amputation or unprintable flags are needed for these records. Similarly, each EJI image can contain four different impressions of each finger as defined in EBTS, but there is no requirement for EJI images to contain all or any one of the fingerprint impressions.

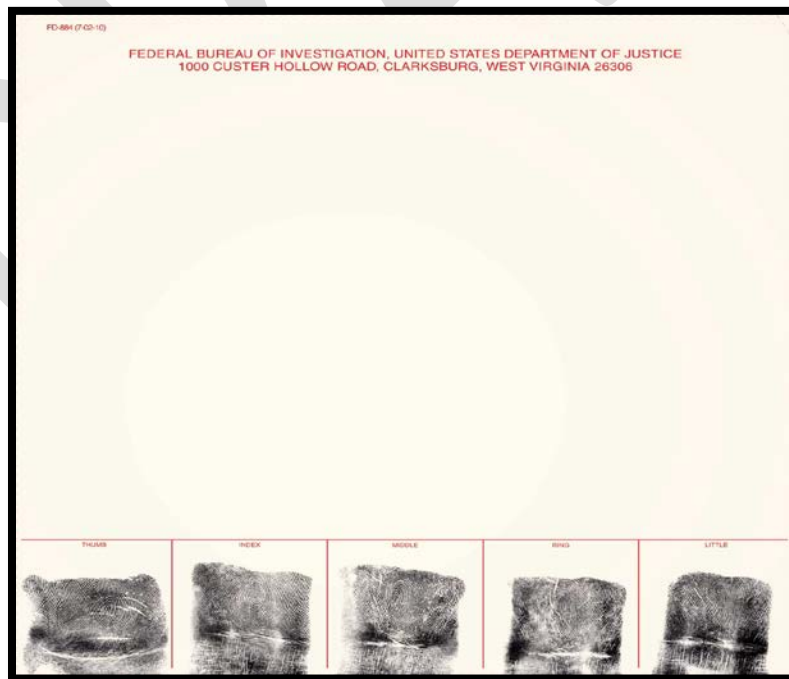
Appendix Figure P-1 FBI Standard Fingerprint Card (FD-249)



Figure P-2 and P-3 contain the front and reverse sides of the FBI Standard Palm Print Card, FD-884.



Appendix Figure P-2 FBI Standard Palm Print Card (FD-884) Front



Appendix Figure P-3 FBI Standard Palm Print Card (FD-884) Reverse

Figure P-4 and P-5 illustrate the FBI Standard Supplemental Finger/Palm Print Cards, FD-884a. It contains additional areas of friction ridge capture, including joint prints (distal, medial, and proximal), rolled finger tips, and rolled thenar area for each hand as shown in the images below.

IDENTIFICATION NO. LAST NAME FIRST NAME MIDDLE NAME ID NUMBER FBI NUMBER

DATE PRINTED SIGNATURE OF OFFICIAL TAKING PRINTS ID NUMBER CONTRIBUTOR (OR)

LEFT  
 RIGHT

THUMB TIP INDEX TIP

INDEX MIDDLE RING

INDEX MIDDLE RING

THENAR

Ball of Palm from One Hand or

Appendix Figure P-4 New FBI Standard Supplemental Finger/Palm Print Card (FD-884a) - Front



**Appendix Figure P-5 New FBI Standard Supplemental Finger/Palm Print Card (FD-884a) - Reverse**

The table below lists the print codes to be used in the Type-13 and -14 records.

**Appendix Table P-1 Print Position Descriptor Code Table**

Type of Print Image	Image Code
Entire Joint Image	EJI
Rolled Tip	TIP
Full Finger Rolled View	FV1
Full Finger Plain Image – left side	FV2
Full Finger Plain Image – center	FV3
Full Finger Plain Image – right side	FV4
Proximal, Distal, or Medial Segment	PRX, DST, MED

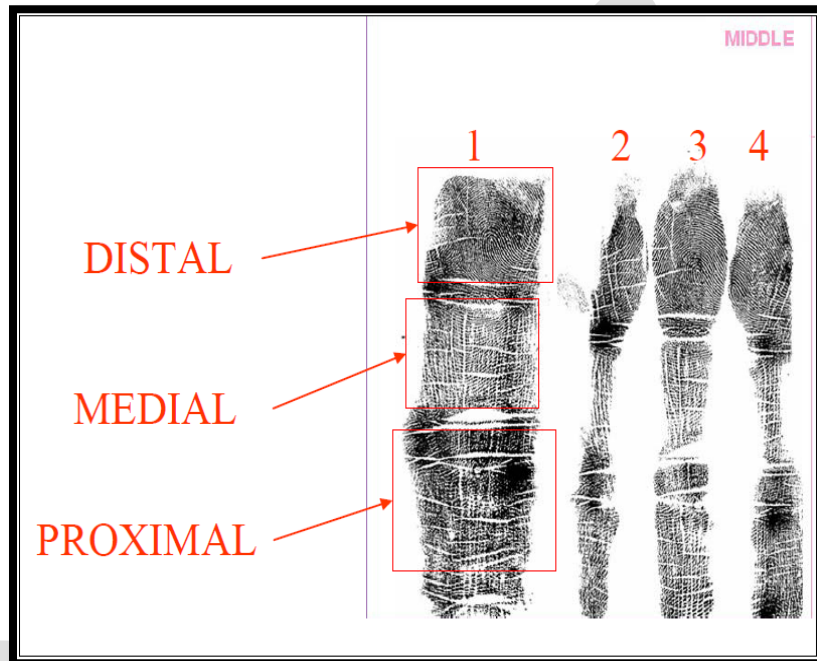
The types of print images are further defined as:

- Joint Prints (later broken down into distal, medial, and proximal)
  - Rolled Joint Print: a single recording of the friction ridge skin on the distal, medial (except thumbs), and proximal areas of each finger. This type of impression is taken in one motion, similar to the taking of a rolled fingerprint impression.
- Rolled Tips
  - A single recording of the friction ridge skin on the tip of the end joint of a finger. This type of impression is taken by placing the end joint of the finger on one side and rolling the finger across the tip such that the fingernail is in constant contact

(or near constant contact) with the sheet of paper until the other side of the finger is reached.

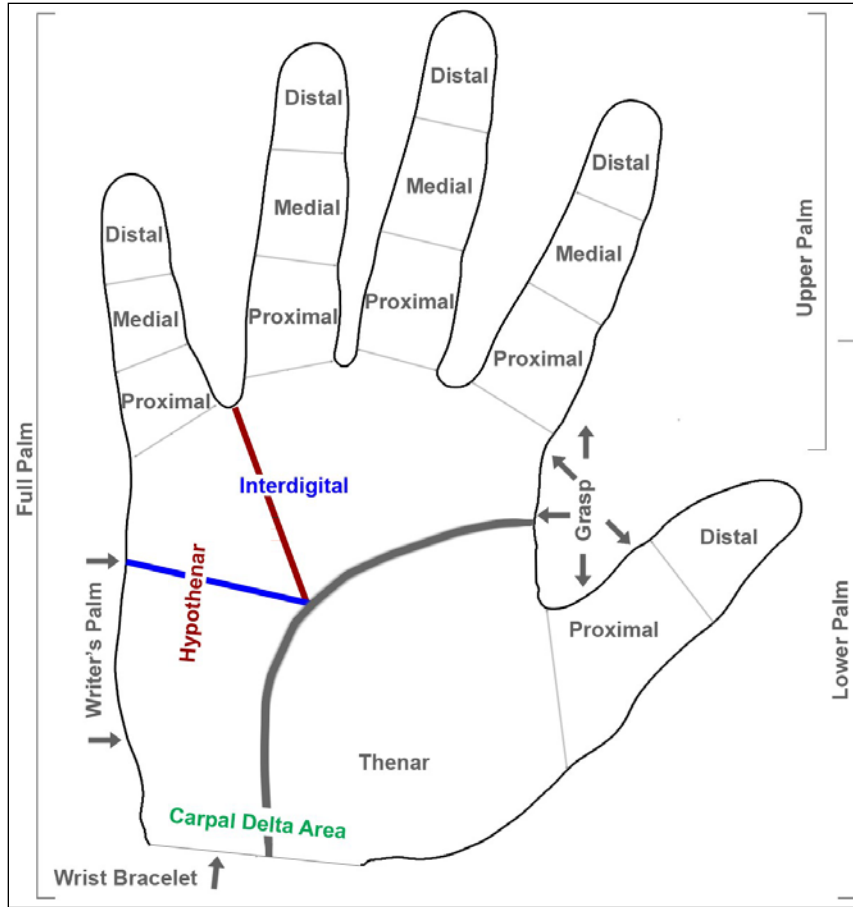
- Rolled Thenar
  - The large cushion of the palm located at the base of the thumb opposite of the Writer's Palm or Hypothenar.

The rolled joint segments are labeled in the image below, where image 1 is the rolled middle finger, 2 and 4 are the pressed sides of the middle finger, and 3 is the pressed surface of the middle finger.



**Appendix Figure P-6 Distal, Medial and Proximal Joints**

The image records of the entire joint image (EJI) are contained in Type-14 records. Offsets to the locations of image segments containing the full finger view, proximal, distal, or medial areas are included with the image records further defined in the Type-14 record field specifications.



Appendix Figure P-7 Finger and Palm Segment Positions

## **APPENDIX Q: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-15 LOGICAL RECORDS**

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This section presents the descriptors and field specifications for Type-15 logical records, defined by ANSI-NIST-ITL as a Palm Print Image Record, as constrained by NGI. NGI has expanded the use of the Type-15 to include available palm print and supplemental fingerprint and palm print images as described in the ANSI/NIST-ITL. To aid in identifying which image set the image on this record type belongs, a new user-defined field to indicate the image set to which the image being transmitted belongs (e.g., is the image from the supplemental card or a palm print card). The new user-defined field, Image Source, is defined below. See Appendix P for a complete definition of each of the image sets. As NGI will be accepting images as defined in the ANSI/NIST-ITL, refer to the ANSI/NIST-ITL for complete definitions of the fields that are allowed in the Type-15. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description.

## Type-15 Data Dictionary

The T15 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

**ISC**      **15.200**      **Image Source Code**      *<ebts:ImageSourceCode>*

This optional numeric field indicates to which source the included image belongs. This field allows images from multiple biometric sets that use the same Record Type to be distinguishable.

**ISC Code Values**

<b>Image Source</b>	<b>Value</b>
Tenprint Fingerprint Set	1
Palmprint Set – Front of Card (including fingers on front)	2
Palmprint Set – Fingers on Back of Card	3
Supplemental Print Set	4

Two different values are used for the Palmprint card to distinguish between the index finger image on the front of the card and the index finger that is part of the set of five finger images on the back of the card. Livescan palm capture should use value 2 and is not expected to contain any finger images.

**SLC**      **15.008**      **Scale Units**      *<biom:ImageScaleUnitsCode>*

This field will be used to define image sampling frequency (pixel density). A value of “1” shall indicate pixels per inch. A value of “2” shall indicate pixels per centimeter. A value of “0” in this field indicates that no scale is provided, and NGI will reject transactions containing this value.

## **APPENDIX R: DESCRIPTORS AND FIELD EDIT SPECIFICATIONS FOR TYPE-13 LOGICAL RECORDS**

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This appendix presents the descriptors and field specifications for Type-13 logical records, defined by ANSI-NIST-ITL as a Friction Ridge Latent Image Record, as constrained by NGI. NGI will use this record type to accept various latent, unknown images at 1000 ppi from users for the purpose of investigative searching of different repositories. As NGI will be accepting images as defined in the ANSI/NIST-ITL, refer to the ANSI/NIST-ITL for the complete definition of the Type-13 fields. The Data Dictionary in this appendix has been organized to display Identifier, Field Number, Field Name, XML Code and Field Description.

DRAFT



## Type-13 Data Dictionary

The T13 Data Dictionary for this appendix only includes those fields that have been constrained by NGI/CJIS functionality. All other fields defined in the ANSI/NIST-ITL will be used as defined in that standard.

**SLC**      **13.008**    **Scale Units**                      *<biom:ImageScaleUnitsCode>*

This field will be used to define image sampling frequency (pixel density). A value of “1” shall indicate pixels per inch. A value of “2” shall indicate pixels per centimeter. A value of “0” in this field indicates that no scale is provided, and NGI will reject transactions containing this value.

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
AA	Plain Arch
ABIS	DoD Automated Biometric Identification System
AC	Approximate Finger Class
ACN	Action to be Taken
AF	Air Force Serial Number
AFIS	Automated Fingerprint Identification System
AFM	Alternate Fingerprint Quality Metric
AFV	AFIS Feature Vector
AGR	Age Range
AKA	Aliases
AMN	Amnesia Victim
AMP	Amputated or Bandaged
AMPCD	Amputated or Bandaged Code
AN	Non-Immigrant Admission Number
ANS	Alphanumeric Special
ANSI	American National Standards Institute
AOL	Arrest Offense Literal
APAT	Pattern Classification
APB	Advisory Policy Board
AR	Alien Registration Number
AS	Air National Guard Serial Number, Army Serial Number, or National Guard Serial Number
ATR	Audit Trail Record
ASCII	American Standard Code for Information Interchange
ASL	Arrest Segment Literal
ATN	“Attention” Indicator
AU	Arch, Type Not Designated
BATQ	Biometric Audit Trail Query Request
BATR	Biometric Audit Trail Response
BCD	Biometric Capture Date
BDB	Biometric Data Block
BDEC	Biometric Decision Submission
BDECR	Biometric Decision Response
BDEL	Biometric Delete Request
BDELR	Biometric Delete Response
BDQ	Biometric Data Quality
BF	Bureau Fugitive Index Number

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
BFO	BDB Format Owner
BFT	BDB Format Type
BIA	Biometric Image Available
BID	Biometric Image Description
BIL	Biometric Image List
BIR	Biometric Information Record
BPX	Bits per pixel
BSI	Biometric Set Identifier
BTY	Biometric Type
CAN	Candidate List
CAR	Criminal Tenprint Submission (Answer Required)
CBEFF	Common Biometric Exchange File Format
CCN	Court Case Number
CDD	Court Disposition Date
CG	Coast Guard Serial Number
CHQ	Characterization Quality
CI	Criminal File
CI	Central Pocket – Loop Whorl – Inner
CI	Canadian Social Insurance Number
CIDN	Contributor Assigned Identification Number
CIN	Contributor Case Identifier Number
CIX	Contributor Case Identifier Extension
CJIS	Criminal Justice Information Services
CLQ	Classifier Quality
CM	Central Pocket – Loop Whorl – Meeting
CNA	Criminal Tenprint Submission (No Answer Necessary)
CNL	Candidate Investigative List
CNT	File Content
CO	Central Pocket – Loop Whorl – Outer
COF	Coordinate Offsets
COM	Comment
COTS	Commercial Off-the-Shelf
CPD	Criminal Subject Photo Delete Request
CPDR	Criminal Fingerprint Direct Route
CPL	Other Court Sentence Provision Literal
CPNU	Criminal Fingerprint Processing Non-Urgent

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
CPR	Criminal Subject Photo Request
CR	Criminal File
CRA	Core(s) Attributes
CRI	Controlling Agency Identifier
CRN	Civil Record Number
CSA	CJIS Systems Agency
CSF	Cascaded Search Flag
CSL	Court Segment Literal
CSN	Candidate Sequence Number
CSP	Color Space
CST	Case Title
CTF	Contrast Transfer Function
CTZ	Country of Citizenship
DAI	Destination Agency Identifier
DAT	Date of Dissemination
DCS	Directory of Character Sets
DEK	Known Deceased
DEU	Unknown Deceased
DHS	Department of Homeland Security
DI	Central Pocket – Double Loop Whorl – Inner
DLA	Delta(s) Attributes
DM	Central Pocket – Double Loop Whorl – Meeting
DMM	Device Monitoring Mode
DO	Central Pocket – Double Loop Whorl – Outer
DOA	Date of Arrest
DOCE	Departmental Order Channeling Electronic
DOM	Domain Name
DOO	Date of Offense
DORBE	Date of Rap Back Event
DOS	Disk Operating System
DPR	Date Printed
DSPE	Disposition File Maintenance Submissions
DSPR	Disposition Response
DST	Distal
DTR	Rap Back Expiration Date Range
DUI	Device Unique Identifier

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
EAD	Employer and Address
EBTS	Electronic Biometric Transmission Specification (started with version 8 of this document)
ECL	Eye Color
EFTS	Electronic Fingerprint Transmission Specification (ended with version 7.1 of this document)
EHRR	Electronic History Request Response – Individual Identity History Subject Sheets
EID	Employee Identification Number
EJI	Entire Joint Image
EMUF	Electronic (In)/Manual (Out) User Fee
EQER	External Query History Error Response
EQHR	External Query History Request
EQRR	External Query History Request Response – Summary
ERRA	Administrative Transaction Error
ERRI	Image Transaction Error
ERRL	Latent Transaction Error
ERRT	Tenprint Transaction Error
ERS	Electronic Rap Sheet
EXP	Response Explanation
EYE	Color Eyes
EVI	Event Identifier
EVT	Event List
FANC	Federal Applicant (No Charge)
FAUF	Federal Applicant User Fee
FBI	Federal Bureau of Investigation
FCP	Fingerprint Characterization Process
FDSP	Electronic Fingerprint Disposition Submission
FFN	FBI File Number
FGN	Finger Number
FGP	Finger/Palmprint Position
FID	Feature Identifier
FIS	Fingerprint Image Submission
FISR	Fingerprint Image Submission Response
FIU	Fingerprint Image(s) Updated
FMT	Minutiae Format
FNDR	Federal No-Charge Direct Route
FNR	Finger Number(s) Requested
FNU	FBI Number

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
FP	Fingerprint
FS	File Separator – indicates the record is complete (end of file)
FVR	Fingerprint Verification Request
FV <sub>x</sub>	Full Finger View ( <i>x</i> = a number)
GCA	Grayscale Compression Algorithm
GEO	Geographic Area of Search
GMT	Greenwich Mean Time
GS	Group Separator – indicates a new field is to follow
GUI	Global Unique Identifier
HAI	Hair Color
HDV	CBEFF Header Version
HGT	Height
HLL	Horizontal Line Length
HPS	Horizontal Pixel Scale
HTI	Hit Type Indicator
HTR	Height Range
HW	Hardware
IAFIS	Integrated Automated Fingerprint Identification System
IBIA	International Biometrics Industry Association
ICN	IAFIS Control Number
ICO	Identification Comments
ID	Identity or Identification
IDC	Information Designation Character
IHS	Identity History Summary
IID	Iris Image Data
IIE	Iris Image Enrollment
IIER	Iris Image Enrollment Request Response
III	Interstate Identification Index
IIR	Iris Images Requested
IMA	Image Capture Equipment
IMG	Image Data
IMP	Impression Type
IMT	Image Type
INCITS	International Committee for Information Technology Standards
IO	Identification Order Number
IPC	Image Property Code

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
IQM	Image Quality Metric
IQS	Image Quality Score
IRD	Iris Capture Date
IRQ	Biometric Image/Feature Retrieval Submission
IRR	Fingerprint Image Request Response
ISO	International Organization for Standardization
ISR	Image Summary Response
ITL	Information Technology Laboratory
ITN	Identification, Tasking, and Networking
JPEG	Joint Photographic Experts Group
LCD	Latent Capture Date
LFFS	Latent Friction Ridge Features Search
LFIS	Latent Friction Ridge Image Search
LFS	Latent Fingerprint Image(s) Submission
LPNQ	Latent Penetration Query
LPNR	Latent Penetration Query Response
LPU	Latent Print Unit
LRSQ	Latent Repository Statistics Query
LRSR	Latent Repository Statistics Response
LS	Left Slant Loop
LSR	Latent Submission Results
MAK	Make
MAP	Miscellaneous Applicant Civil
MC	Marine Corps Serial Number
MD	Mariner's Document or Identification Number
MDD	Message Data Dictionary
MDX	Minutiae Identification Index
MED	Medial
MET	Method
MFC	Message Field Code
MIL	Military Code
MIN	Minutiae
MMS	Make/Model/Serial Number
MNC	Maximum Number of Candidates
MNT	Minutiae Type Designation
MNU	Miscellaneous Identification Number

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
MODL	Model
MP	RCMP Identification of Fingerprint Section Number
MPR	Missing Person
MPS	Major Case Print Segment
MRC	Minutiae and Ridge Count Data
MSG	Message [or] Status/Error Message (appears both ways)
MTD	Minutiae Type Designation
MTF	Modular Transfer Function or Modulation Transfer Function (appears both ways)
NA	National Agency Case Number
NAM	Name
NCIC	National Crime Information Center
NCR	Number of Candidates / Images Returned
NDR	Name of Designated Repository
N-FACS	National Fingerprint-Based Applicant Check Study
NFF	National Fingerprint File
NFIQ	NIST Fingerprint Image Quality
NFUE	Non-Federal User-fee Expedite
NFUF	Non-Federal Applicant User Fee
NIR	Number of Images Requested
NIST	National Institute of Standards and Technology
NMN	Number of Minutiae
NNDR	Non-Federal No-Charge Direct Route
NOT	Note Field
NRC	Number of Required Candidates
NS	Navy Serial Number
NSR	Native Scanning Resolution
NTR	Nominal Transmitting Resolution
OA	Originating Agency Police or Identification Number
OCA	Originating Agency Case Number
OCP	Occupation
OEM	Original Equipment Manufacturer
OFO	Other Federal Organizations
OFR	Originating Fingerprint Reading System
ORI	Originating Agency Identifier
ORN	Orientation Uncertainty
PAS	Photo Acquisition Source



## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
PAT	Pattern Level Classifications
PATCL	Pattern Classification Code
PAX	Photo Acquisition Source
PCD	Palmprint Capture Date
PDR	Photo Delete Response
PEN	Penetration Query Response
PHD	Photo Date
PHT	“Photo Available” Indicator
PI	Personal Identification Number (State Issued Only)
PI	Plain Whorl – Inner
PM	Plain Whorl – Meeting
PNG	Portable Network Graphics
PO	Plain Whorl – Outer
POA	Pose Offset Angle
POB	Place of Birth
POS	Subject Pose
PP	Passport Number (U.S. only)
PPA	Palmprints Available
PPE	Palmprint Enrollment Request
ppi	pixels per inch
PPR	Palmprint Enrollment Response
PRI	Priority
PRR	Subject Photo Request Response
PRX	Proximal
PRY	Transaction Priority
PS	Port Security Card Number
PTY	Photo Type
PUM	Position Uncertainty
PXS	Photo Description
QMS	Quality Measure
RAC	Race
RAE	Rotation Angle of Eye
RAP	Request for Electronic Rap Sheet
RAR	Return All Records Indicator
RAU	Rotation Uncertainty
RBATN	Rap Back Attention Indicator

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
RBC	Rap Back Category
RBDI	Rap Back Disclosure Indicator
RBEI	Rap Back Event Information
RBFN	Rap Back Field Name
RBFT	Rap Back Field Text
RBMI	Rap Back Maintenance Indicator
RBNF	Rap Back Activity Notification Format
RBNI	Rap Back Activity Notification Identifier
RBOO	Rap Back Opt Out in-state Indicator
RBSD	Rap Back Subscription Date
RBSI	Rap Back Subscription Identifier
RBSL	Rap Back Subscription List
RBST	Rap Back Subscription Term
RBT	Rap Back Trigger
RBTED	Rap Back Triggering Event Details
RBTD	Rap Back Term Date
RBUD	Rap Back User Defined
RCD1	Ridge Core Delta One for Subpattern Classification
RCD2	Ridge Core Delta Two for Subpattern Classification
RCN1	Ridge Count Number One
RCN2	Ridge Count Number Two
RDG	Minutiae Ridge Count Indicator
REC	Response Code
RES	Residence of Person Fingerprinted
RET	Retention Code
RFC	Request For Change
RFP	Reason Fingerprinted
RFR	Request Features Record
RISC	Repository for Individuals of Special Concern
RMS	Root Mean Squared
ROV	Region of Value
RPIS	Rapid Fingerprint Identification Search
RPISR	Rapid Fingerprint Identification Search Response
RPR	Request Photo Record
RS	Record Separator – indicates a repetition of field or group of subfields are to follow
RSC	Reason Supervision Cancelled

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
RSO	Octant Residuals
RSR	Repository Statistics Response
RSV	Reserved
RTID	(Canada) Real Time Identification
SAN	State Arrest Number
SAP	Subject Acquisition Profile
SCNA	Subject Control Number
SCO	Send Copy To
SDOB	Submitted Date of Birth
SEC	Subject Eye Color
SED	Custody or Supervisory Status End Date
SEG	Fingerprint Segment Position(s)
SERNO	Serial Number
SEX	Sex
SFP	Subject Feature Points
SHC	Subject Hair Color
SHPS	Scan Horizontal Pixel Scale
SIB	State Identification Bureau
SID	State Identification Number
SI	Subject Identifier
SII	Supplementary Identity Information
SLC	Scale Units
SLE	Custody or Supervisory Status Literal
SMD	SMT Descriptors
SMT	Scar, Mark and Tattoo
SMS	SMT Size
SNAM	Submitted Name
SOC	Social Security Account Number
SOR	Want or Sex Offender Registry
SPA	Subject Pose Angle
SPC	Special Population Cognizant Files
SQM	Segmentation Quality Metric
SQS	Subject Quality Score
SRA	Supervised Release Action
SRB	Search Results Biometric
SRC	Source Agency

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
SRE	Submission Results – Electronic
SRF	Search Results Findings
SRL	Search Results — Latent
SRT	Search Results — Tenprint
SS	Selective Service Number
SSD	Custody or Supervisory Status Start Date
SST	Supervised Status Type
STD	Special Table Data
STT	Supervision Transferred To
SVPS	Scan Vertical Pixel Scale
SW	Software
SXS	Subject Facial Description
TAA	Treat As Adult
TBD	To Be Determined
TBR	To be Resolved
TCD	Tenprint Capture Date
TCL	Tattoo Color
TCN	Transaction Control Number
TCR	Transaction Control Reference
TIP	Rolled Tip
TOT	Type of Transaction
TPIS	Tenprint Fingerprint Image Searches
TPRS	Tenprint Rap Sheet
TPRR	Tenprint Rap Sheet Response
TSR	Type of Search Requested
TT	Tented Arch
UC	Unclassifiable [or] Unable to Classify
UCN	Universal Control Number
UDF	User-Defined Field
UDI	User-Defined Image
UHN	Unsolicited Hit Notification
UK	United Kingdom
ULD	Unsolved Latent Record Delete Request
ULDR	Unsolved Latent Delete Response
ULF	Unsolved Latent File
ULM	Unsolved Latent Match Notification

## APPENDIX AC - ACRONYMS

Acronyms for Elements can be found in Appendix L  
Acronyms for TOTs can be found in the Data Dictionary

Acronym	Description
ULR	Unsolved Latent Retained
UP	Unable to Print
UPF	Unsolved Photo File
US	Unit Separator – indicates another subfield is to follow
US-VISIT	U.S. Visitor and Immigrant Status Indicator Technology
UTD	User-Defined Testing Date
UUBD	Unsolicited Unsolved Biometric Delete
UULD	Unsolicited Unsolved Latent Delete
V	Version
VA	Veterans Administration Claim Number
VAR	Value-Added Reseller
VER	Version
VID	Version Identifier
VLL	Vertical Line Length
VPS	Vertical Pixel Scale
WGT	Weight
WSQ	Wavelet Scalar Quantization
WTR	Weight Range
WU	Whorl, Type Not Designated
XI	Central Pocket – Accidental Whorl – Inner
XM	Central Pocket – Accidental Whorl – Meeting
XML	eXtensible Markup Language
XO	Central Pocket – Accidental Whorl – Outer
XXX	Unknown