Department of Justice
Federal Bureau of Investigation

Technical Specifications Document for the Contactless Fingerprint Pilot Project

Version 1.1

Document Date: September 29, 2023

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Change History Section		
Version/ Revision	**Revision Date**	**Description of Change**
1.1	9/29/2023	Added the following sentence to 3.5 CFP Responses: “CJIS will provide a response to the contactless submissions; however, there will be a 60-minute delay on contactless responses to ensure no law enforcement action is taken on the contactless response.”

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1.0 Introduction

The Contactless Fingerprint Pilot (CFP) will allow the collection of fingerprints via a contactless method (e.g., smartphone camera) following a submission where the image capture was made with an FBI-certified contact fingerprint collection device. The criminal justice contactless fingerprint search will leverage the FBI's Repository for Individuals of Special Concern (RISC). The FBI Criminal Justice Information Services (CJIS) Division will require participating agencies complete a CFP Participation Memorandum of Understanding (MOU) prior to using or extending Pilot services.

The objective of the CFP is to compare match performance of contactless fingerprints against contact fingerprints from an FBI-certified fingerprint collection device in an operational environment leveraging the FBI RISC service. CFP participants will submit a contact fingerprint image collected with an FBI-certified fingerprint collection device prior to collection of fingerprints via a contactless method.

The CFP also provides opportunities to contribute to the development of National Institute of Standards and Technology (NIST) products including contactless fingerprint collection device certification requirements, specifications for contactless fingerprint image compression, and an open-source contactless image quality metric.

2.0 Scope

The intent of this document is to outline the technical concepts, boundaries, processes, and transaction requirements for the CFP. This document identifies slight modifications made to the Type-14 record structure to incorporate contactless fingerprint images into a workflow environment while maintaining segregation from contact fingerprint images. General business rules will be specified in the CFP Concept of Operations (CONOPS) and the CFP MOUs with each participating agency.

Transaction and field specifications in this document are based primarily on FBI Electronic Biometric Transmission Specification (EBTS) 11.0, the American National Standards Institute/NIST – Information Technology Laboratory (ITL) 1-2011 Update 2015 – Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information, and NIST Special Publication (SP) 500-334: Contactless Fingerprint Capture and Data Interchange Best Practice Recommendation. This document assumes familiarity with FBI EBTS transactions and ANSI/NIST-ITL record/field specifications and only defines new or differing requirements. Therefore, these documents must be used in conjunction with this specification to fully understand CFP services.

3.0 Contactless Fingerprint Pilot Requirements

3.1 Use Case

The use case for contactless fingerprint collection in this pilot is limited to biometric fingerprint searches leveraging the FBI's RISC. RISC allows for rapid biometric searches with fewer than ten fingerprint images in time-critical situations involving heightened investigative interest or increased risk to the public and/or to law enforcement personnel.

3.2 Data Exchange

The Next Generation Identification (NGI) system is bound by many FBI CJIS Division security policies. The CFP shall follow these same security policies.

3.2.1 Transfer Protocol

CFP fingerprint images are captured by a mobile fingerprint device and transmitted to the requestor's CJIS Systems Agency (CSA)/State Identification Bureau (SIB) and then to RISC using existing NGI communications infrastructure. When the image reaches the FBI, the processing is automated and results in the generation of a response to the requestor within seconds of the submission. The state/CSA agency is responsible for formatting and routing the response to the requestor. The contactless transaction, Rapid Print Image Search - Contactless (RPISC), will be a lower priority than the contact transaction and may not be returned as quickly.

3.2.2 State Information Bureau (SIB)/CJIS Systems Agency (CSA)

All CFP search requests must be routed through the contributor's SIB or CSA.

3.2.3 Originating Agency Identifier (ORI)

CFP search requests utilize the submitting agencies existing NGI ORIs for all submissions.

3.3 General Policies and Guidelines

3.3.1 Two Transactions Required

Participants in the pilot shall obtain contact fingerprints as well as mobile contactless fingerprints (two transactions total). The contact fingerprints must be collected in accordance with the current RISC policy and submitted to NGI prior to the collection of contactless fingerprints.

3.3.2 Informed Consent

Consent shall be obtained from the subject prior to collection of contactless fingerprint images. As the purpose of contactless fingerprint collection in this pilot is for test and evaluation rather than a law enforcement action, informed consent of the subject is required. The options for obtaining consent have not been finalized, however a couple of options have been discussed.

One possible option would be providing the subject with written information detailing how the contactless images will be used. Another option which could simplify the process would be for the mobile application used by the law enforcement officer to contain a Terms of Service page in which the officer must check a box stating consent has been obtained prior to being able to use the mobile fingerprint collection application. The method of consent will be defined in each MOU between the FBI and pilot participants.

3.3.3 Fingerprint Collection Requirements

A RISC search requires a minimum of two and a maximum of ten fingerprints for conducting a query. The number of fingerprints collected can differ between the contact and contactless collection as long as at least two fingers are the same in each collection. For example, if the contact-based RISC search is conducted using the index fingers from each hand, then the contactless-based CFP search should also include at least the same two index fingers. The contact fingerprints must be obtained using an FBI-certified mobile fingerprint collection device.

3.3.4 Linking Contact and Contactless Transactions

Systematically linking the contact and contactless submissions from the same individual is critical and promotes trust in the reliability of pilot results. Each participant shall work with the FBI's Programs Research and Standards Unit (PRSU) to determine the transaction linking method that best fits within their capabilities. The method for linking the transactions will be written into the MOU with each participating agency. Two options for linking the transactions are listed below; however, other methods, including automated methods, are welcome for discussion with PRSU.

3.3.4.1 Type-1 Fields

A link can be made between the contact and contactless transactions by inputting the Transaction Control Number (1.009 TCN) received from the contact submission into the Transaction Control Reference (1.010 TCR) field of the contactless submission. This may add extra time, and possibility for error, to the collection if done manually but will provide a definitive linking of the transactions.

3.3.4.2 Type-2 Fields

Participants may utilize one of the user-defined fields such as the 2.006 Attention Indicator (ATN) or the 2.009 Originating Agency Case Number (OCA) fields to enter unique information to link the transactions. The ATN field typically contains the designation of the individual to whose attention a response is to be directed. Pairing images with the same ATN information that come together within a defined timestamp range could be a method to link the two submissions. The OCA field, which contains the Originating Agency Case Identifier assigned by the originating agency, could be used in a similar fashion to link the contact and contactless transactions.

3.3.5 Criminal Justice Purposes

CFP search requests should be by criminal justice agencies for Criminal Justice Purposes only.

3.4 CFP Searches

Submissions and process workflow for contact fingerprint submission will remain the same as the current RISC service for the pilot. There are slight modifications to the Type-14 field requirements for contactless responses and some Type-2 fields that are omitted for submissions and responses. More specific details can be found in Sections 4 and 5 of this document.

3.5 CFP Responses

Contact submissions will generate responses as they are currently in the RISC service, with no changes. CJIS will provide a response to the contactless submissions; however, there will be a 60-minute delay on contactless responses to ensure no law enforcement action is taken on the contactless response. The response generated for the contactless submission will be a simple Red, Yellow, or Green response in the 2.059 Search Results Findings (SRF) field ("R" for Red, "Y" for Yellow or "G" for Green). No further information will be provided in return and no cascaded searches of the Unsolved Latent File (ULF) will be performed. More specific details can be found in Sections 4 and 5 of this document.

As always, 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 possible candidate (or candidates) in RISC which is below the level of confidence established for a highly probable match (red response). The yellow response may thus only be used as an investigative tool providing leads for further investigative inquiries. A Green Response indicates no hit (i.e., the search did not locate a viable candidate in the RISC).

Law enforcement action can **only** be taken on the contact submission search result.

Responses to all RISC search requests must be routed through the contributor's CSA/SIB.

3.6 Data Retention

The fingerprint submissions of both the contact and contactless submissions are Search Only and will not be enrolled into the NGI database. However, submission and response data will be logged and retained for test and evaluation outside of NGI. Comparison analysis of the response results of the contact and contactless fingerprint submissions will be used to assess the viability of contactless fingerprints for the defined use case. The contact and contactless fingerprints from the same subject will also be used to aid in evaluation of procedures for establishing a certification process for contactless fingerprint collection devices to ensure images produced are interoperable with existing contact databases.

4.0 Record Types and Fields

4.1 Type – 1 Transaction Information Record

A Type-1 logical record is mandatory and is required for each RISC transaction. The Type-1 record shall provide information describing type and use or purpose for the transaction involved, a listing of each logical record included in the file, the originator or source of the physical record, and other useful and required information items.

Each field shall begin with the number of the record type followed by a period followed by the appropriate field number followed by a colon. Table 4-1 provides a list of the fields for the transaction information record. Within a Type-1 logical record, entries shall be provided in numbered fields. It is required that the first two fields of the record are ordered. For each of the fields, Table 4-1 lists the "condition" code, the field number, the field name, character type, field size, and occurrence limits. Based on a three-digit field number, the maximum byte count size for the field is also given. The two entries in the "field size per occurrence" include all character separators used in the field. The "maximum Bytes" includes the field number, the information, and all the character separators. An entry containing an asterisk "*" indicate that there is no established limit.

Refer to Appendix B of the latest version of the CJIS EBTS for a detailed description of fields used within a Type-1 record.

4-1 Type-1 (Transaction) Record Sample

Field Number	Identifier	Field Name	Occurrences		Example Data
			Min	Max	
1.001	LEN	Logical Record Length	1	1	122
1.002	VER*	Version Number	1	1	0500
1.003	CNT	File Content	1	1	
	FRC	First Record Category Code	1	1	1
	CRC	Content Record Count	1	1	01
	REC	Record Category Code	1	99	02
	IDC	Information Designation Character	1	99	00
1.004	TOT*	Type of Transaction	1	1	RPISC
1.005	DAT	Date	1	1	20101025
1.006	PRY	Transaction Priority	0	1	7
1.007	DAI	Destination Agency ID	1	1	WVMEDS001
1.008	ORI	Originating Agency ID	1	1	WVMEDS002
1.009	TCN	Transaction Control Number	1	1	DUMMYTCN_DUMMYTCN
1.010	TCR†	Transaction Control Reference	0	1	DUMMYTCR_DUMMYTCR
1.011	NSR*	Native Scanning Resolution	1	1	500
1.012	NTR*	Nominal Resolution	1	1	500
1.013	DOM*	Domain Name	1	1	
a	DNM	Domain Name	1	1	NORAM
b	DVN	Domain Version Number	1	1	EBTS 11.0

* Field value is constant for Pilot.
† Submitted TCR values are not tracked or stored by the Pilot.

4.2 Type – 2 User-Defined Descriptive Text Record

Type-2 logical records shall contain user-defined textual fields providing identification and descriptive information associated with the subject of the transaction. Data contained in this record shall conform in format and content to the specifications of the domain name as listed in the 1.013-Domain Name field found in the Type-1 record.

Type-2 logical records shall contain textual information relating to the subject of the transaction and shall be represented in an American Standard Code for Information Interchange (ASCII) format. This record may include such information as the state or FBI numbers, physical characteristics, demographic data, and the subject's criminal history. Every transaction usually contains one or more Type-2 records which are dependent upon the entry in the 1.004-Type-of-Transaction (TOT) Field (see Sections 5 and 6 of this document).

There are slight modifications to the Type-2 fields for the RPISC temporary TOT since the contactless submission will initiate a simple search of the RISC repository only. RPISC transactions will not generate a cascaded search of the ULF or generate any additional notifications, and a caveat stating prohibitions of the use of the contactless response for law enforcement action will be generated (see Section 5 of this document).

4.3 Type – 14 Fingerprint Image Records

The contactless fingerprint submissions shall follow the Type-14 record structure as set forth in the ANSI/NIST standard (NIST SP 500-290)[1] and adhering to the modifications set forth in NIST *Special Publication 500-334: Contactless Fingerprint Capture and Data Interchange Best Practice Recommendation*. This best practices document creates a pathway for integrating contactless fingerprint collection devices into existing systems while also utilizing elements in the biometric transaction to keep images collected from contactless devices separate from contact-collected images. The document was developed with the intention of eventual amendment to NIST SP 500-290 once it has been determined that contactless technology has matured to acceptable levels. Contactless fingerprints are not permitted to be submitted in a Type-4 record. Table 4-3 shows the layout of the modified fields in the Type-14 record. Please refer to the ANSI/NIST-ITL for complete definitions of the fields that are allowed in the Type-14.

[1] NIST SP 500-290 -- ANSI/NIST-ITL 1-2011 — Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information, approved November 2011

4-2 Type-14 Record Layout

Field Number	Mnemonic	Content Description	Cond Code	Character			Value Constraints	Occurrence	
				Type	Min #	Max #		Min #	Max #
14.003	IMP	IMPRESSION TYPE	D	N	1	2	Table 4.3.1 of this document	1	1
14.901	FCT	FRICTION RIDGE CAPTURE TECHNOLOGY	O	N	1	2	FCT = 1	0	1
14.904	MMS	MAKE/MODEL/SERIAL NUMBER	D					0	1
	MAK	Capture device make	M	U	1	50	none	1	1
	MOD	Capture device model	M	U	1	50	none	1	1
	SER	Capture device serial number	M	U	1	50	none	1	1
	FSV	Capture device firmware/software version	M	U	1	50	none	1	1
	CRT	Capture device certification code	M	U	1	255	none	1	1
	DMO	Capture device mobility designation	M	A	3	3	DMO=MOB, STA,TET	1	1
	DCT	Capture device commercial off-the-shelf (COTS) designation	M	A	1	1	DCT = Y, N	1	1
	DSR	COTS device serial number	M↑	U	1	50	none	1	1

4.3.1 RISC Impression Type (IMP)

The mandatory field 14.003 indicates the method in which the fingerprint was obtained. This field shall use the updated IMP defined in Table 4-3.1. All participants shall use IMP of 43 for contactless fingerprint submissions.

4-3.1 Friction Ridge Impression Types

Exemplar Prints		
Contact Impressions (Legacy/Unchanged)		
Plain Contact	0	Finger(s) presented still on platen
Rolled Contact	1	Finger rolled on platen
Live-scan swipe	8	Finger swiped on platen
Contactless Acquisitions (New)		
Contactless – Search Only	43	Contactless capture intended for search only, **shall not** be enrolled in gallery.
Contactless–Search or Enroll	44	Contactless capture for search and/or enrollment in biometric reference database.

4.3.2 Friction Ridge Capture Technology (FCT)

FCT (14.901) is an optional field in the Type-14 record as defined in the ANSI/NIST Standard (ANST) SP 500-290e3. FCT is populated with a code [ANST, Table 11] signifying the type of technology used to capture the friction ridge image. [ANST, Table 11] does not yet reflect all capture technologies for contactless and will be revisited as the technology matures. If this optional field is used for backwards compatibility, it shall be populated with "1" (mapping to "Other" in [ANST, Table 11]) when a contactless impression type (IMP 43) is specified.

4.3.3 Make/Model/Serial Number (MMS) field (14.904)

The MMS field (14.904) is a dependent field containing the make, model, and serial number (MMS) of the fingerprint capture device. This field is mandatory when a contactless impression type is specified (IMP 43). The MMS field consists of eight information items detailed in Table 4-3.3.

4-4.3 MMS Information Items

Content Item	Content Description
Make/MAK	Capture device make, Mandatory
Model/MOD	Capture device model, Mandatory
Serial number/SER	Capture device serial number, Mandatory This is the serial number for the capture solution. The capture solution can be (for example) a desktop contactless scanner, an automated scanning booth, or a hand-held solution using either COTS or custom hardware. If the solution uses COTS device (such as a mobile phone), DCT shall be Y and the COTS device serial number shall be included in the Device Serial Number (DSR) field as well.
Firmware/Software version / FSV	Capture device firmware/software version, Mandatory Firmware in this context can include the code embedded on the device which is used to capture the fingerprint from the device sensor. Software in this context can include the code which operates on the fingerprint captured from the device sensor and transforms that data into a contact-compatible representation.
Certification number/CRT	Capture device certification identifier, Mandatory (for example, FBI assigned certificate code) If a certification identifier is not available, NONE shall be inserted into this field.
Device mobility/DMO	Capture device mobility designation, Mandatory Desktop/stationary location: STA (not mobile) Handheld mobile device portable: MOB (mobile) Desktop device in vehicle or portable rig: TET (mobile)
COTS Designation/DCT	Capture device COTS designation, Mandatory Device manufactured as a unit: N

	Solution is app on COTS device (i.e., mobile phone, tablet, laptop or some other device that provides a host device sensor): Y
COTS Serial number/DSR	COTS device serial number, Optional Mandatory if DCT is Y. This is the serial number of the underlying COTS device (such as a mobile phone) that makes up the end-to-end capture solution.

4.3.4 RISC Finger Position

This mandatory fixed-length field of six binary bytes shall contain possible finger positions beginning in the leftmost byte of the field (byte seven of the record). The decimal code number corresponding to the known or most probable finger position shall be taken from Table 4-3.4 and entered as a binary number right justified and left zero filled within the eight-bit byte. For the RISC Pilot, the remaining five unused bytes shall be filled with the binary equivalent of "255". Also specific to the CFP a minimum of two and maximum of ten unique Type-14 logical records can be sent with each transaction and each record can only contain one fingerprint impression. Table 4-3.4 also lists the maximum image width and height dimensions for each of the finger positions.

4-5.4 RISC Finger Position Codes

Finger position	Finger code	Width (mm)	Width (in)	Length (mm)	Length (in)
Right thumb	01	40.6	1.6	38.1	1.5
Right index finger	02	40.6	1.6	38.1	1.5
Right middle finger	03	40.6	1.6	38.1	1.5
Right ring finger	04	40.6	1.6	38.1	1.5
Right little finger	05	40.6	1.6	38.1	1.5
Left thumb	06	40.6	1.6	38.1	1.5
Left index finger	07	40.6	1.6	38.1	1.5
Left middle finger	08	40.6	1.6	38.1	1.5
Left ring finger	09	40.6	1.6	38.1	1.5
Left little finger	10	40.6	1.6	38.1	1.5
Plain right four fingers (may include extra digits)	13	81.3	3.2	76.2	3.0
Plain left four fingers (may include extra digits)	14	81.3	3.2	76.2	3.0

5.0 Types-of-Transactions (TOT)

All CFP Pilot transactions must be CJIS EBTS compliant. Sections 5 and 6 of this document describe the CJIS EBTS fields that will be used for each TOT's Type-2 record.

5.1 Rapid Print Image Search (RPIS)

The RPIS transaction for contact submissions is unchanged. This transaction is a one-to-many, rapid response, and "Lights Out" search request. It contains the descriptive data and a range of two to ten rolled or flat fingerprint images. The types and quantities of logical records required in a RPIS submission are as follows:

- 1 Type-1 Header Record
- 1 Type-2 Descriptive Record (see Table 5-1)
- 2-10 Type-14 Rolled or Flat fingerprint images

5.2 Rapid Print Image Search Contactless (RPISC)

The Rapid Fingerprint Identification Search Contactless (RPISC) will be a temporary TOT created for the use in the contactless fingerprint pilot. The RPISC TOT will not permit the user to request an electronic rap sheet (2.070 RAP) or request a photo record (2.096 RPR).

- 1 Type-1 Header Record
- 1 Type-2 Descriptive Record (see Table 5-1)
- 2-10 Type-14 Rolled or Flat fingerprint images

A comparison of the differences in Type-2 fields between the RPIS and RPISC can be seen below:

5-1 RPIS and RPISC EBTS fields for Type-2 Descriptive Record

RPIS		
Tag Element	**Field Name**	**Min/Max**
2.001 LEN	Logical Record Length	1
2.002 IDC	Information Designation Character	1
2.006 ATN	Attention Indicator	1
2.009 OCA	Originating Agency Case Number	0..1
2.018 NAM	Name	0..1

RPISC		
Tag Element	**Field Name**	**Min/Max**
2.001 LEN	Logical Record Length	1
2.002 IDC	Information Designation Character	1
2.006 ATN	Attention Indicator	1
2.009 OCA	Originating Agency Case Number	0..1
2.018 NAM	Name	0..1

2.022 DOB	Date of Birth	0..1
2.024 SEX	Sex	0..1
2.067 IMA	Image Capture Equipment	0..1
2.070 RAP	Request for Electronic Rap Sheet	0..1
2.073 CRI	Controlling Agency Identifier	1..3
2.084 AMP	Amputated or Bandaged	0..13
2.096 RPR	Request Photo Record	0..1
2.098 NDR	Name of Designated Repository	0..10

2.022 DOB	Date of Birth	0..1
2.024 SEX	Sex	0..1
2.067 IMA	Image Capture Equipment	0..1
2.070 RAP	Request for Electronic Rap Sheet	N/A
2.073 CRI	Controlling Agency Identifier	1..3
2.084 AMP	Amputated or Bandaged	0..13
2.096 RPR	Request Photo Record	N/A
2.098 NDR	Name of Designated Repository	6 RISC Only

5.3 Rapid Print Image Search Response (RPISR)

The RPISR for contact submission is unchanged. This transaction is the response returned by the CFP to an RPIS submission. The types and quantities of logical records returned in a RPISR response are as follows:

- 1 Type-1 Header Record
- 1 Type-2 Descriptive Record (see Table 5-2)
- 2 Type-2 If two candidates are returned, a separate Type-2 record will be included for each candidate.

Actionable responses from the FBI will only be sent for the contact transaction.

5.4 Rapid Print Image Search Response Contactless (RPISCR)

The RPISCR is a temporary TOT for responses of contactless fingerprint submissions during the pilot. RPISC transactions will not generate a cascaded search of the ULF or generate any additional notifications, and a caveat stating prohibitions of the use of the contactless response for law enforcement action will be generated. The contactless transaction will receive a "Red," "Yellow," or "Green" response, but only the contact submission will receive responses back with information in fields 2.071 ACN (Action to be Taken), 2.073 CRI (Controlling Agency Identifier), 2.075 ERS (Electronic Rap Sheet), and 2.2023 SII (Supplemental Identity Information).

The 2.088 NOT (Note) field will always be returned in the contactless response and will contain the following Caveat: "***Users shall take NO law enforcement action based solely on the***

contactless fingerprint response. This response is based on a search using non-FBI certified contactless fingerprint devices. If no candidates are found, a candidate may be found using an FBI certified fingerprint device."

5-2 RPISR and RPISCR EBTS fields for Type-2 Descriptive Record

RPISR		
Tag Element	**Field Name**	**Min/Max**
2.001 LEN	Logical Record Length	1
2.002 IDC	Information Designation Character	1
2.006 ATN	Attention Indicator	1
2.009 OCA	Originating Agency Case Number	0..1
2.014 FNU	FBI Number/UCN	0..2
2.018 NAM	Name	0..1
2.022 POB	Place of Birth	0..1
2.059 SRF	Search Results Findings	1
2.060 MSG	Status/Error Message	0..1
2.067 IMA	Image Capture Equipment	0..1
2.071 ACN	Action to Be Taken	0..1
2.073 CRI	Controlling Agency Identifier	0..3
2.075 ERS	Electronic Rap Sheet	0..1
2.088 NOT	Note Field	1
2.2023 SII	Supplementary Identity Information	0..1

RPISCR		
Tag Element	**Field Name**	**Min/Max**
2.001 LEN	Logical Record Length	1
2.002 IDC	Information Designation Character	1
2.006 ATN	Attention Indicator	1
2.009 OCA	Originating Agency Case Number	0..1
2.014 FNU	FBI Number/UCN	0..2
2.018 NAM	Name	0..1
2.022 POB	Place of Birth	0..1
2.059 SRF	Search Results Findings	1
2.060 MSG	Status/Error Message	0..1
2.067 IMA	Image Capture Equipment	0..1
2.071 ACN	Action to Be Taken	N/A
2.073 CRI	Controlling Agency Identifier	N/A
2.075 ERS	Electronic Rap Sheet	N/A
2.088 NOT	Note Field	1
2.2023 SII	Supplementary Identity Information	N/A

*The 2.071 ACN, 2.073 CRI, 2.075 ERS, and 2.2023 SII fields will not be included in the response for contactless searches since they are coming from devices that are not currently certified. It is another way to ensure no action is taken on the contactless search alone.

5.5 Error Messages

A Tenprint Transaction Error (ERRT) TOT response will be returned to indicate when an RPIS submission resulted in a transaction error. The type of error detected will be defined in the Status/Error Message (MSG) field (2.060) of the response. Up to 11 errors can be recorded in the MSG field. 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.

The following example outlines the elements of an ERRT TOT response:

1.01:153
1.02:0400
1.03:11200
1.04:ERRT
1.05:20120302
1.07:ST0123456
1.08:WV1234567
1.09:L20121234567890123456
1.10:123456789
1.11:00.00
1.12:00.002.001:84
2.002:00
2.060:E0001-Mandatory element T1_DAI (Destination Agency ID) was not supplied in message.

The following list defines the error messages associated with the RPIS submission.

A0004 -- Unauthorized EBTS Transaction
E0001 -- Required element missing
E0002 -- Element failed validation: the element is missing in the request
E0003 -- Element failed validation: the element does not comply with the acceptable range of values
E0004 -- EBTS record parse error: Content is not parseable
E0006 -- EBTS field parse error: EBTS field could not be parsed
L0109 -- The quality of the fingerprint images is too poor to permit processing.
L0009 -- Image Decompression error
L0007 -- Image open error
L0008 -- Image read error
R0002 -- Internal segment error; retry message.
S0002 -- General segment error

Refer to Appendix M in the latest version of the CJIS EBTS for details about error messages.

6.0 Descriptors and Field Edit Specifications for Type-2 Logical Records used by RISC

This is a consolidated list of CJIS EBTS fields used for RISC transactions. Refer to Appendix C of the CJIS EBTS 11.0 for a comprehensive list of all CJIS EBTS descriptors and field edit specifications for type-2 logical records.

6.1 ACN 2.071 – Action to be Taken - Not Available for Contactless

This field shall contain additional information such as record type [e.g., Wants and Warrants (W&W), Known or Suspected Terrorists (KST), Sexual Offender Registry (SOR)] and contact information when a Red ("R") value is returned in the 2.059-SRF field. When the same FBI number has been entered into RISC with different record types, the record type returned in the response is based on a prioritized list with W&W being the highest priority.

6.2 ATN 2.006 – "Attention" Indicator

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.

6.3 CRI 2.073 – Controlling Agency Identifier – Not Returned in Contactless Response

For EBTS purposes, this field shall be a nine-byte alphanumeric field. 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 NGI Computerized Contributor Address file.

6.4 ERS 2.075 – Electronic RAP Sheet – Not Available for Contactless

This field shall contain the identity history information. The RPISR transaction will populate this field with the NGI Identity History Summary (IHS), when requested. 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).

6.5 FBI 2.014 – FBI Number

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.

6.6 IDC 2.002 – Image Designation Character

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.

6.7 IMA 2.067 – Image Capture Equipment

This free-text field is used to log the make, model, and serial number of the equipment used to acquire images. It is a grouped field composed of three subfields: the Make (MAK), Model, and Serial Number of the acquisition device separated by the US separator character.

6.8 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.

6.9 NAM 2.018 – Name

This alpha-special field contains the name(s) of the subject. The format shall be the surname followed by a comma (,) followed by the given name(s), which are separated by a space. Hyphens, commas, and blanks are allowed as special characters. Numerals are not allowed.

6.10 NDR 2.098 – Name of Designated Repository

This field contains the numerical designation of the repository(ies) to be searched. Repository numbers are assigned by the FBI CJIS Division. Multiple entries in this field will indicate a desire to search more than one repository. Multiple entries will be separated by the <RS> separator. Table 6-1 lists the NDR values accepted by the RISC Pilot. All contactless submissions shall use "6."

6-1 RISC Related NDR Values

NDR Value	File Name
6	Search All RISC Categories
11	RISC Wants and Warrants (W&W)
12	RISC Sexual Offender Registry (SOR)
13	RISC Known and appropriately Suspected Terrorist (KST)
14	RISC International Terrorist File (ITF)
15	RISC Persons of Special Interest (Other)

6.11 NOT 2.088 – Note Field

This free-text field is used to provide response caveat(s) required by the IIETF and approved by the CJIS Advisory Policy Board (APB) Working Groups. The field shall consist of lines with a maximum of 74 characters per line (text of 72 plus 2-line control characters).

6.12 OCA 2.009 – Originating Agency Case Number

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

6.13 RAP 2.070 – Request for Electronic RAP Sheet - Not Available for Contactless

The purpose of this field is to allow the contributors to optionally request “identity history information. A “Y” indicates that information is desired and an omitted field or an “N” indicates that no information should be returned with the response.

6.14 RPR 2.096 – Request Photo Record - Not Available for Contactless

This one-character alpha field is used to indicate a user’s desire to have the RISC Pilot return a Type-10 photo record if one is on file and disseminable.

6.15 SRF 2.059 – Search Results Findings

This field is only used in submission responses and contains a single character. For the RPISR TOT, the SRF field will contain one of the following: “R” for Red, “Y” for Yellow or “G” for Green.MSG 2.060 – Status/Error Message

6.16 MSG 2.060 – Status Error Message

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. In the future, this field will be used to return an indicator that no photo is available. Until the capability is available in NGI, a message indicating this is a future capability will be returned.

6.17 POB 2.020 – Place of Birth

The subject’s place of birth (POB) 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.

6.18 SII 2.2023 – Supplementary Identity Information - Not Available for Contactless

This field will contain limited National Crime Information Center information which presently includes the Offense Field, the Original Offense Code Field, the Caution and Medical Conditions Field, and the Subgroup Field Handling Code Caveat. The format and content of the information in this field may vary for different transactions.

6-2 Field Edit Specifications for RISC Type-2 Elements

Field No.	Identifier	Field Name	Character Type	Field Size Min.	Field Size Max.	Example	Special Characters
2.001	LEN	LOGICAL RECORD LENGTH	N	2	7	2.001:909<GS>	
2.002	IDC	IMAGE DESIGNATION CHARACTER	N	2	2	2.002:00<GS>	
2.006	ATN	"ATTENTION" INDICATOR	ANS	3	30	2.006 :SA J Q DOE,RM 11867<GS>	Any printable 7-bit ASCII character with the exception of the period is allowed.
2.009	OCA	ORIGINATING AGENCY CASE NUMBER	ANS	1	20	2.009:Q880312465<GS>	Any printable 7-bit ASCII character with the exception of the period is allowed.
2.014	FBI	FBI NUMBER	AN	1	9	2.014:62760NY12<GS>	
2.018	NAM	NAME	AS	3	30	2.018:JONES, ANTHONY P<GS>	Commas, hyphens, and blanks are all allowed as special characters.
2.020	POB	PLACE OF BIRTH	A	2	2	2.020:VA<GS>	
2.059	SRF	SEARCH RESULTS FINDINGS	A	1	1	2.059:R<GS>	
2.060	MSG	STATUS/ERROR MESSAGE	ANS	1	300	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.
2.067	IMA	IMAGE CAPTURE EQUIPMENT	SET			2.067:DBI<US>1134<US>12345<GS>	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	300	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.
2.073	CRI	CONTROLLING AGENCY IDENTIFIER	ANS	1	9	2.073:NY0303000<GS>	
2.075	ERS	ELECTRONIC RAP SHEET	ANS	4	200,000	2.075:<rap sheet example here><GS>	Any printable 7-bit ASCII character is allowed.
2.088	NOT	NOTE FIELD	ANS	1	1,000	2.088:NOTE<GS>	Any printable 7-bit ASCII character is allowed.
2.096	RPR	REQUEST PHOTO RECORD	A	1	1	2.096:Y<GS>	
2.098	NDR	NAME OF DESIGNATED REPOSITORY	N	1	3	2.098:1<GS>	
2.2023	SII	SUPPLEMENTARY IDENTITY INFORMATION	ANS	4	10,000	2.2023:<sample SII content><GS>	Any printable 7-bit ASCII character is allowed.

Under the Character Type column: A = alpha, B = binary, N = numeric, S = special characters.

7.0 FBI Points of Contact

Table 7-1 lists the CJIS Divisions points of contact for the CFP.

7-1 FBI RISC Points of Contact

Name	Area	Phone	E-Mail
Ben Smith	Pilot Manager	(304) 625-2134	blsmith@fbi.gov
Eric Phillips	Task Lead	(304) 625-4531	emphillips@fbi.gov

8.0 Acronyms

Table 8-1 lists Acronyms used within this document.

8-1 Acronyms

Acronym	Definition
ANS	Alphanumeric-special
ANSI	American National Standards Institute, Inc.
APB	Advisory Policy Board
ASCII	American Standard Code for Information Interchange
CJIS	Criminal Justice Information Services
CMF	Criminal Master File
EBTS	Electronic Biometric Transmission Specification
ERS	Electronic Rap Sheet
IHS	Identity History Summary
ITF	International Terrorist File
KST	Known and appropriately Suspected Terrorist
NIST	National Institute of Standards and Technology
ORI	Originating Agency Identifier
PIV	Personal Identity Verification
ppi	Pixels per inch
RISC	Repository for Individuals of Special Concern
RPIS	Rapid Print Image Search
RPISR	Rapid Print Image Search Response
SIB	State Identification Bureau
SII	Supplementary Identity Information
SOR	Sexual Offender Registry
TOT	Type-of-Transaction
ULF	Unsolved Latent File

Appendix A – Image Quality Specifications

Mobile Fingerprint Scanners

Digital softcopy images obtained from mobile fingerprint scanners must have sufficient quality to allow the following functions to be performed: (l) conclusive fingerprint comparisons (identification or non-identification decision), (2) fingerprint classification, (3) automatic feature detection, and (4) overall NGI search reliability.

Mobile fingerprint scanners must be capable of producing images that exhibit good geometric fidelity, sharpness, detail rendition, gray-level uniformity, and gray-scale dynamic range, with 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.

Table A-1 gives the requirements for mobile fingerprint scanners used in the CFP

A-1 RISC Prototype Mobile Fingerprint Scanner Requirements

Subject Acquisition Profile	# of Fingers Captured	Minimum Graylevels	Minimum Image Dimensions (WxH)	Maximum Compression Ratio	Certification of Sensor	Transmission
30	1	256	0.8” x 1.0”	10:1	PIV^	Image
40	1 to 2	256	1.6” x 1.5”	15:1	PIV^	Image
45	1 to 2	256	1.6” x 1.5”	15:1	App. F*	Image
50	1 to 3	256	3.2” x 2.0”	15:1	App. F*	Image
60	1 to 4	256	3.2” x 3.0”	15:1	App. F*	Image

^ - Personal Identity Verification (PIV) Image Quality Specifications for Single Finger Capture Devices.
* - CJIS EBTS Appendix F.

9.0 References

1. **[ANSI/NIST-ITL]** NIST Special Publication 500-290 -- ANSI/NIST-ITL 1-2011 — Data Format for the Interchange of Fingerprint, Facial, & Other Biometric Information, approved November 2011, http://Fingerprint.NIST.Gov/Standard/
2. **[CJIS SECURITY POLICY]** Criminal Justice Information Services (CJIS) Security Policy, Latest Version, https://www.fbi.gov/about-us/cjis/cjis-security-policy-resource-center/
3. Criminal Justice Information Services (CJIS) Electronic Biometric Transmission Specification (EBTS), 242-HQ-A6687913-SYSDOCU, Version 11.0, April 16, 2021.
4. **[Mobile ID]** NIST Special Publication 500-280v2, Mobile ID Device Best Practice Recommendation, Version 2.0, November 2015, https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.500-280v2.pdf
5. Personal Identity Verification (PIV) Image Quality Specifications for Single Finger Capture Devices, https://fbibiospecs.fbi.gov/file-repository/pivspec.pdf/view