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For Financial Services

X9.100-180-2006

(Formerly published as DSTU X9.37–2003)

Specifications for Electronic Exchange of Check and Image Data

Accredited Standards Committee X9, Incorporated
Financial Industry Standards

Date: July 11, 2006

American National Standards Institute

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Introduction

The purpose of this standard is to provide the financial industry with a format necessary to perform electronic check exchange (ECE), with or without images. The format supports forward presentment, posting, return notification, IRD printing and presentment and returns, as well as existing customer information reporting products. The standard also supports multiple check clearing alternatives, e.g., bank-to-bank, bank-to-switch.

This standard has been modified from its original design to allow check images to be linked to and transmitted along with the (financial) posting data. The standard utilizes a cash letter structure to support the exchange of posting data only, posting data and check images, or posting data followed by a file of posting data and check images. This standard can also be used to exchange financial data and images with other applications, such as remote deposit and lockbox processes. This standard defines a variable length formatted file. Some records within the file contain variable content and others retain fixed length content as in previous X9.37 standards.

The standard was designed to accommodate and work with existing data formats used to transmit check-related data, and to provide flexibility in accommodating future developments in check processing and check product offerings. The use of this standard will enable financial institutions to cut processing costs and fraud losses by reducing the number of times a paper item must be handled, and by shortening the forward presentment and return cycle time frames.

Initially conceived as a necessary step in preparation for enactment of the Federal Reserve Board's Same-day Settlement proposal, it quickly became evident that the standard would benefit the US Payments System in other ways.

The standard was originally developed for the Accredited Standards Committee on Financial Services, ASC X9, by the Subcommittee for Electronic Wholesale Payment Related & EDI Financial Services Standards, ASC X9E and has been revised by the Subcommittee for Check Processing, ASC X9B.

There are fifteen annexes in this standard. Annexes A, B, C, D, E, F, and G, are normative and are considered part of this standard; Annexes H, I, J, K, L, M, N and O are informative and are not considered part of this standard. Users of the standard are warned against using clauses of the standard, especially the record layouts, out of context. Clauses 1.0 through 6.8, and the normative annexes, provide information essential to the successful use of the record layouts and to the successful implementation of the standard itself.

X9 intends to develop a new Part 2 to this standard which will establish required TIFF 6.0 tags and associated values to support the exchange of check images. This new Part 2 will be developed within the next twelve months.

NOTE - The user's attention is called to the possibility that compliance with this standard may require use of an invention covered by patent rights.

By publication of this standard, no position is taken with respect to the validity of this claim or of any patent rights in connection therewith.

Suggestions for the improvement or revision of this standard are welcome. They should be sent to the Accredited Standards Committee X9, Inc., 1212 West Street, Suite 200, Annapolis, Maryland 21401 USA.

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This Standard was processed and approved for submittal to American National Standards Institute (ANSI) by the Accredited Standards Committee on Financial Services, X9. Committee approval of the Standard does not necessarily imply that all the committee members voted for its approval.

The **X9 committee** had the following members:
Jim Shaffer, X9 Chairman
Vincent DeSantis, X9 Vice-Chairman
Cynthia Fuller, Executive Director
Susan Yashinskie, Program Manager

Organization Represented	**Representative**
ACI Worldwide	Jim Shaffer
American Bankers Association	C. Diane Poole
American Express Company	John Allen
American Financial Services Association	Mark Zalewski
Bank of America	Daniel Welch
Capital One	Scott Sykes
Certicom Corporation	Daniel Brown
Citigroup, Inc.	Mike Halpern
Deluxe Corporation	John Fitzpatrick
Diebold, Inc.	R. David Nein
Discover Financial Services	Jennifer Schroeder
Federal Reserve Bank	Dexter Holt
First Data Corporation	Connie Spurgeon
Fiserv	Skip Smith
FSTC, Financial Services Technology Consortium	Daniel Schutzer
Hewlett Packard	Larry Hines
Hypercom	Scott Spiker
iStream Imaging/Bank of Kenney	Ken Biel
IBM Corporation	Todd Arnold
Identrus	Mack Hicks
Ingenico	John Spence
Intuit, Inc.	Jana Hocker
J.P. Morgan Chase & Co	Jacqueline Pagan
KPMG LLP	Mark Lundin
MagTek, Inc.	Carlos Morales
MasterCard International	William Poletti
National Association of Convenience Stores	Teri Richman
National Security Agency	Sheila Brand
NCR Corporation	Steve Stevens
SWIFT/Pan Americas	Malene McMahon
The Clearing House	Vincent DeSantis
U.S. Bank	Marc Morrison
University Bank	Stephen Ranzini
VeriFone, Inc.	Brad McGuinness
VECTORsgi	Ron Schultz
VISA	Richard Sweeney
Wachovia Bank	Ray Gatland
Wells Fargo Bank	Ruven Schwartz

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The **X9B Committee** had the following members:
Dexter Holt, X9B Chairman
Curt Siroky, X9B Vice Chairman
Daniel Welch, X9B Vice Chairman
Cynthia Fuller, Executive Director
Susan Yashinskie, Program Manager

Organization Represented	Representative
All My Papers	Larry Krummel
American Bankers Association	C. Diane Poole
American Financial Services Association	Mark Zalewski
BancTec, Inc.	David Hunt
Bank of America	Daniel Welch
Boise Paper Solutions	John Claflin
Carreker	Don Harman
Certicom Corporation	Daniel Brown
Check Site, Inc.	Trevor Kensey
Citigroup, Inc.	Mike Halpern
Clarke American Checks, Inc.	John W. McCleary
ClearWave Electronics	Mark Ross
Compass Bank	Kirk Maze
Davis & Henderson	Dragan Calusic
Deluxe Corporation	John Fitzpatrick
Diebold, Inc.	Bruce Chapa
Discover Financial Services	Julie Shaw
Domtar, Inc.	Howard Hunter
ECCHO	Phyllis Meyerson
Federal Reserve Bank	Mark Kielman
First Data Corporation	Connie Spurgeon
Fiserv	Skip Smith
FSTC, Financial Services Technology Consortium	Daniel Schutzer
Huntington Bank	Michelle Dunkle
Hypercom	Scott Spiker
iStream Imaging/Bank of Kenney	Ken Biel
IBM Corporation	Andrew Sutton
ImageScan	Hanna Jabbour
Ingenico	John Spence
Intuit, Inc.	Jana Hocker
J.P. Morgan Chase & Co	Jacqueline Pagan
John H. Harland Company	Curt Siroky
KPMG LLP	Alfred F. Van Ranst Jr.
Liberty Enterprises, Inc.	Rick Zecher
MagTek, Inc.	Carlos Morales
National Security Agency	Sheila Brand
NACHA The Electronic Payments Association	Nancy Grant
NCR Corporation	David Norris
NetDeposit, Inc.	William Wong
Oce North America, Inc	Tony Ribeiro
Orbograph	Dave Kliewer
Paychex Inc	Carl Tinch

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RDM Corporation	Karin McNabb
Relizon	Mel Stephenson
Relyco Sales Inc	Rick Gagnon
Reynolds and Reynolds Co.	Mark Hoenie
Rosetta Technologies	Jim Maher
Silver Bullet Technology, Inc.	Bryan Clark
Solutran	Michelle Kocur
Source Technologies	Wally Burlingham
Standard Register Company	Russell Hill
SWIFT/Pan Americas	Malene McMahon
The Clearing House	Steve Jackson
Troy Group, Inc.	Michael Riley
U.S. Bank	Marc Morrison
Unisys Corporation	David J. Concannon
VECTORsgi	Jerry Bowman
Vicor, Inc.	Rick Smith
VISA	Richard Sweeney
Wachovia Bank	Keith Ross
Wells Fargo Bank	Al Hecht
Xerox Corporation	Frank Bov

Under ASC X9 procedures, a working group may be established to address specific segments of work under the ASC X9 Committee or one of its subcommittees. A working group exists only to develop standard(s) or guideline(s) in a specific area and is then disbanded. The individual experts are listed with their affiliated organizations. However, this does not imply that the organization has approved the content of the standard or guideline.

(Note: Company names of non-member participants listed only if release form was signed.)

Working Group X9B6 on Electronic Exchange of Check and Image Data which developed this standard had the following participants:

Phyllis Meyerson, Chair, ECCHO

Organization Represented	**Representative**
	Christopher Dowdell
ACOM Solutions	Gregory T. Church
ACOM Solutions	Carl Grant
Advanced Financial Solutions	Stan Hall
Advanced Financial Solutions	Dan Ulrich
All My Papers	Larry Krummel
All My Papers	Brett Nelson
American Bankers Association	Tom Judd
American Bankers Association	C. Diane Poole
BancTec, Inc.	Peter Caporal
BancTec, Inc.	David Hunt
Bank of America	Joe Shuster
Bank of America	Daniel Welch
Canadian Payments Association	Judith Leclerc
Canadian Payments Association	Michaela McBean

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Carreker	Harry Hankla
Carreker	Don Harman
Certicom Corporation	Daniel Brown
Check Site, Inc.	Neil Godfrey
Check Site, Inc.	Trevor Kensey
Check Site, Inc.	Michael Lowery
Citigroup, Inc.	Mike Halpern
Clarke American Checks, Inc.	John W. McCleary
Clarke American Checks, Inc.	Valerie Meddleton
ClearWave Electronics	Mark Ross
Comerica	Paul Burns
Comerica	Mary Kosinski
Compass Bank	Jan Cole
Compass Bank	Kirk Maze
Custom Direct LLC	Tanya Cook
Custom Direct LLC	Dale Dabbs
Data-Mail, Inc.	Kerry Hannify
Data-Mail, Inc.	Mark Sullivan
Deluxe Corporation	John Fitzpatrick
Deluxe Corporation	Brian Flaten
Deluxe Corporation	Barry Green
Deluxe Corporation	Lyle Prickett
Deluxe Corporation	Ralph Stolp
Deluxe Corporation	John Toedter
Deluxe Corporation	Mike Valiquet
Diebold, Inc.	Bruce Chapa
Diebold, Inc.	Laura Drozda
Diebold, Inc.	R. David Nein
Diebold, Inc.	Michael Shirk
Domtar, Inc.	Howard Hunter
Domtar, Inc.	Rick Mullen
Domtar, Inc.	Anthony Rigelman
ECCHO	Phyllis Meyerson
Federal Reserve Bank	Jeannine M. DeLano
Federal Reserve Bank	Deb Hjortland
Federal Reserve Bank	Dexter Holt
Federal Reserve Bank	Mark Kielman
First Data Corporation	Pam Carter
First Data Corporation	Paquito Singleton
First Data Corporation	Connie Spurgeon
Fiserv	Keay Edwards
Fiserv	Lori Hood
Fiserv	Joe Pachunka
Fiserv	William Saffici
Fiserv	Skip Smith
Fiserv	Chad Speiser
Fiserv	Linda Weber
FSTC, Financial Services Technology Consortium	Frank Jaffe
FSTC, Financial Services Technology Consortium	Christine Nautiyal

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FSTC, Financial Services Technology Consortium	Daniel Schutzer
Huntington Bank	Michelle Dunkle
Huntington Bank	Jim Posani
iStream Imaging/Bank of Kenney	Ken Biel
iStream Imaging/Bank of Kenney	Mike McGuire
IBM Corporation	Rod Moon
IBM Corporation	Andrew Sutton
ImageScan	Hanna Jabbour
ImageScan	Lucie Johnson
Ingenico	Ann Dismukes
Ingenico	Rob Harrison
Intuit, Inc.	Craig Cuffle
Intuit, Inc.	Jana Hocker
J.P. Morgan Chase & Co	Jacqueline Pagan
J.P. Morgan Chase & Co	Jim Wright
John H. Harland Company	Al Ludwick
John H. Harland Company	Curt Siroky
Liberty Enterprises, Inc.	Vicky Lee
Liberty Enterprises, Inc.	Rick Zecher
MICR Automation Inc.	Richard Illyes
MICR Automation Inc.	Vladimir Vassiliev
NCR Corporation	Wayne Doran
NCR Corporation	David Norris
NetDeposit, Inc.	William Wong
Nexpress Solutions, Inc. A Kodak Company	Aaron Lazar
Nexpress Solutions, Inc. A Kodak Company	Kathleen Roland
Oce North America, Inc	Tony Ribeiro
Orbograph	Uriel BenDavid
Orbograph	Joe Gregory
Parascript, LLC	Mike Fenton
Parascript, LLC	Kaz Jaszczak
Paychex Inc	Carl Tinch
Piracle	Alan Quarnberg
PrintXcel	Peter Atzman
PrintXcel	Deanna Day
RDM Corporation	Bill Faulkner
RDM Corporation	Tom Hayosh
RDM Corporation	Tom Kettell
RDM Corporation	Karin McNabb
Relizon	Mel Stephenson
Relyco Sales Inc	Rick Gagnon
Relyco Sales Inc	Helene Kontonis
Relyco Sales Inc	Michael Steinberg
Reynolds and Reynolds Co.	Carolyn Brackman
Silver Bullet Technology, Inc.	Bryan Clark
Silver Bullet Technology, Inc.	Ray Higgins
Skyline Data, Inc.	R. Camacho
Skyline Data, Inc.	Patrick Krug
Solutran	Dan Galinson

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Solutran	Michelle Kocur
Solutran	Cindy Neiderhiser
Solutran	Carmen R. Nordstrand
Solutran	Scott Reid
Source Technologies	Wally Burlingham
Source Technologies	Roger Owens
Standard Register Company	Melissa Barnes
SWIFT/Pan Americas	Malene McMahon
The Clearing House	Henry Farrar
The Clearing House	Steve Jackson
The Clearing House	Susan Long
U.S. Bank	Valerie Melville
U.S. Bank	Nicole Mettler
U.S. Bank	Marc Morrison
Unisys Corporation	David J. Concannon
Unisys Corporation	Leonard Wasielewski
VECTORsgi	Jerry Bowman
VECTORsgi	Ron Schultz
Vicor, Inc.	Robert Kirk
Vicor, Inc.	Rick Smith
Wells Fargo	Ann Kirk
Wachovia Bank	Andrew Garner
Wachovia Bank	Ray Gatland
Wachovia Bank	Scott Meloun
Xerox Corporation	Frank Bov
Xerox Corporation	Susan Siani

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American National Standard for Financial Services – Specifications for Electronic Exchange of Check and Image Data

1 Scope, Purpose, and Application

1.1 Scope

This standard, including the normative annexes, establishes the file sequences, record types and field formats to be used for the electronic exchange of check MICR line data, associated check processing data, check images and optional user information in the form of cash letters.

This standard does not address operational, implementation or settlement issues. These issues may include, but are not limited to, a choice of: data and image compression, encryption, and transmission specifications and data representation. The informative annexes attached to this standard provide useful information for implementing the standard.

Data security and privacy issues related to the use of this standard are outside the scope of the standard. Users of the standard are advised to refer to ANS X9.73 Cryptographic Message Syntax (CMS), DSTU X9.99-2004, Privacy Impact Assessment Standard and the Gramm Leach Bliley Act.

1.2 Presentment Disclaimer

“Presentment” is used throughout this standard in a colloquial sense only: to refer to or to describe an operational process, the movement of checks and check-related data from a collecting bank to a paying bank.

In no instance shall use of the term “presentment” in the standard be construed as a legal definition of presentment, or as a description of when presentment as a legal event occurs. Nor does its use in any way define the legal rights and responsibilities of parties participating in the check clearing process, or parties otherwise interested in a check.

This standard shall not be used by parties in dispute to define legal standards of conduct in the check clearing process, and cannot be relied upon in that context. Parties interested in the legal standards governing the check clearing process should consult the Uniform Commercial Code, Regulation CC - Availability of Funds and Collection of Checks, Federal Reserve Operating Circulars, Clearinghouse rules, other clearing agreements, relevant case law, and other sources of applicable law.

1.3 Purpose and Application

The purpose of this standard is to provide a structure to facilitate electronic exchange of check-related data and images for the purposes of forward check presentment, IRD creation, return item notification, and returns processing.

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2 References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ANS X9.7-1999 (X9.100-110), *Bank Check Background and Convenience Amount Field Specification*

ANS X9.27-2000 (X9.100-20), *Print and Testing Specification for Magnetic Ink Printing (MICR)*

ANS X9.100-140-2004 (X9.90), *Specifications for an Image Replacement Document - IRD*

ANS X9.100-160-1-2004 (X9.13), *Part 1: Placement and Location of Magnetic Ink Printing (MICR)*

ANS X9.100-160-2-2004 (X9.13), *Part 2: EPC Field Use*

ASC X9 TR2-2005 (X9/TG-2), *Understanding, Designing and Producing Checks*

DSTU X9.100-183-2005 (X9.83), *Specification for Electronic Check Adjustments*

ISO 3166-1981, *Codes for the representation of names of countries*

NACHA, *2005 ACH Rules*

Regulation CC (12 CFR part 229), *Availability of Funds and Collection of Checks*

3 Terms and Definitions

The defining standard is listed in parentheses after each term. The first listing is the current defining standard and the second listing, if present, is the past or future defining standard.

3.1 account number (ANS X9.100-180/X9.37)
The number used by a bank to identify a customer's account. It is usually contained in the On-Us field of the MICR line.

3.2 administrative return (ANS X9.100-180/X9.37)
Distinguishes to the presenting bank an item returned for reasons other than a dishonored item. These items are usually handled internally by the presenting bank rather than being charged to a customer. These types of items can also be handled through the adjustment process. Examples include poor quality image, ineligible items, etc.

3.3 adjustment (ANS X9.100-180/X9.37)
An accounting entry to correct errors on cash letters or checks.

3.4 amount field (ANS X9.100-160-1/X9.13)
Positions 1-12 of the MICR line on a document, within which the dollar amount is encoded.

3.5 auxiliary On-Us field (ANS X9.100-160-1/X9.13)
A variable format, optional field in the MICR line, located to the left of the routing field, used at the discretion of the issuing financial institution.

3.6 Bank of First Deposit (BOFD)(ANS X9.100-111/X9.53)
Same as "Depositary Bank".

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3.7 box (ANS X9.100-180/X9.37)
A physical package used for storing and transporting checks. A typical box holds about 3,000 checks. The box total also may serve as an additional control total on the cash letter listing.

3.8 bundle (ANS X9.100-180/X9.37)
A subset of a cash letter usually containing about 200-400 checks. The dollar amount of the bundle serves as a control total and is listed on the cash letter.

3.9 cash letter (ANS X9.100-180/X9.37)
A group of checks sent by a bank or its agents to another bank, a clearinghouse, or a Federal Reserve office. A cash letter contains a number of negotiable items, usually checks, accompanied by a transmittal letter that lists the dollar totals of the check bundles.

3.10 check-related data (ANS X9.100-180/X9.37)
Check-related data can be processing data, MICR code line data (including amount), the check image data (digital representation of the check) and user-defined data.

3.11 collecting bank (ANS X9.100-180/X9.37)
The bank through which a check is captured and/or processed for funds movement.

3.12 cycle (ANS X9.100-180/X9.37)
A number or letter that can be translated to a processing day of the week.

3.13 depositary bank (ANS X9.100-111/X9.53) (as used in this standard)
The first bank to which a check or the image of a check is transferred for deposit, even if such bank is also the paying bank or the payee; or a bank to which a check or check image is transferred for deposit in an account at such bank, even if the check or check image is received and indorsed first by another bank (a collecting bank not the depositary bank).

3.14 digital certificate (ANS X9.100-180/X9.37)
A data structure that is digitally signed by a trusted third party (i.e., Certificate Authority) to securely convey a public key and other data elements needed to verify that digitally signed images have been generated by the proper owner and have not been altered or replaced. The specific data structure format used is X.509 Version 3 Digital Certificates.

3.15 digital certificate issuer distinguished name (ANS X9.100-180/X9.37)
Information used to uniquely identify the issuer of a digital certificate. The Issuer Distinguished Name is used in conjunction with the Digital Certificate Serial Number to uniquely reference the Digital Certificate for a given image. Information is conveyed as a set of characters consisting of “attribute = data” pairs. Typical attributes include organization (o=), country (c=), common name (cn=), and organization unit (ou=).

3.16 digital certificate serial number (ANS X9.100-180/X9.37)
The Digital Certificate Serial Number within a Digital Certificate is unique and is used in conjunction with the Issuer Distinguished Name to uniquely reference the Digital Certificate for a given image.

3.17 digital signature (ANS X9.100-180/X9.37)
A number created from a variable length image (or other data set) to produce a fixed length hash value that is encrypted using a private key. The process of creating a digital signature from the image (or other data) is called “digitally signing” the image. Images are verified by decrypting their digital signature using the public key that corresponds to the private key used to produce the digital signature.

3.18 electronic check (ANS X9.100-180/X9.37)
A generic term designating an end-to-end negotiable instrument that has only existed in an electronic form.

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3.19 electronic check exchange (ECE) (ANS X9.100-180/X9.37)
The electronic exchange of check-related data, in lieu of, or in addition to, the exchange of paper checks. For forward presentment, usually referred to as electronic check presentment (ECP).

3.20 ECE institution (ANS X9.100-180/X9.37)
The institution that creates and sends the electronic cash letter information.

3.21 external processing code (EPC) field (ANSX9.100-160-1/X9.13)
An optional, single digit field located to the left of the routing field on a check. The EPC field is used for special purposes as authorized by the ASC X9.

3.22 fixed format (ANS X9.100-160-1/X9.13)
A term applied to the required and optional fields for which the location, digit sequence and structure are completely specified.

3.23 GMT Greenwich Mean Time (ANS X9.100-180/X9.37)
The Greenwich Meridian (Prime Meridian or Longitude Zero degrees) marks the starting point of every time zone in the World. GMT, Greenwich Mean (or Meridian) Time, is the mean (average) time that the earth takes to rotate from noon-to-noon.

3.24 image replacement document (IRD) (ANS X9.100-140/X9.90) (as used in this standard)
An IRD is a substitute image copy of a check or a replacement for a previous IRD that includes a machine readable MICR line. An IRD may under certain legal arrangements be the practical and legal equivalent of the original paper check or a previous IRD. An IRD conforming to X9.100-140-2004 may be used as a Substitute Check in conformance with the Check Clearing for the 21st Century Act (Check 21 Act or Act).

3.25 item (ANS X9.100-180/X9.37)
An item is the physical representation of a financial transaction. Examples include checks, IRDs and related paper objects such as deposit slips and cash in or cash out tickets. Items are generally referred to by their type, as for instance, cash items, transit items, on-us items, clearing items, general ledger items, etc.

3.26 magnetic ink character recognition (MICR) (ANS X9.27/X9.100-20)
The common machine language specification for the paper-based payment transfer system. It consists of magnetic ink printed characters of a special design, called the E13B font that can be recognized by high-speed magnetic recognition equipment.

3.27 On-Us field (ANS X9.100-160-1/X9.13)
The MICR print band area between the closing amount symbol and the opening transit symbol. Arrangement of the On-Us field is variable, specified by the financial institution on which the check is written. It may include such information as the user's account number, a consecutive number, and a transaction, or processing code.

3.28 original check truncation institution (ANS X9.100-140/X9.90)
The institution that has truncated the original check document and is the holder of the original document or is responsible for knowing the location of the original document.

3.29 paper (ANS X9.100-180/X9.37) (as used in this standard)
Refers to a physical document.

3.30 payor (ANS X9.100-180/X9.37)
The party issuing the check as an account holder of a payor institution. The payor also is known as the maker or writer of the check.

3.31 payor bank (ANS X9.100-180/X9.37)
The institution by or through which a check is payable. The payor bank is also referred to as paying bank.

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3.32 posting data (ANS X9.100-180/X9.37)
All data required by the payor bank to post the item from the exchanged file.

3.33 presentment (ANS X9.100-180/X9.37)
The operational process of moving checks and check related data from a collecting bank to a paying bank.

3.34 qualified return check (QRC) (ANS X9.100-180/X9.37)
A return check prepared for automated processing. It contains a qualified strip or is placed in a carrier envelope and encoded with the routing number of the depositary bank, the dollar amount of the check, and the value '2' in position 44 of the MICR line of the original and the value '5' in position 44 of the qualified MICR line of an IRD.

3.35 Regulation CC (12 CFR part 229) (ANS X9.100-180/X9.37)
The regulation adopted by the Board of Governors of the Federal Reserve System to implement the Expedited Funds Availability Act (12 U.S.C. 4001-4010) and Check Clearing for the 21st Century Act (Check 21) (12 U.S.C. 5001-5018). The regulation specifies, among other things, minimum availability standards for deposited funds and rules designed to expedite check collections and returns.

3.36 return item (ANS X9.100-180/X9.37)
A check returned unpaid by the payor bank. The check may have been dishonored or returned for administrative reasons. It may be returned to the BOFD directly or through an intermediary.

3.37 routing field (X9.100-160-1/ANS X9.13)
Positions 33 through 43 of the MICR line that contains the routing number.

3.38 routing number (RN) (ANSX9.100-160-1/X9.13)
The numeric identifier of a financial institution as assigned by the American Bankers Association or its agent. Routing numbers are used for routing purposes on checks, and virtually all other MICR documents, such as deposit tickets and batch tickets. A specific numeric series is reserved for internal bank usage. Also as used in this standard as a generic nine digit institution identifier.

3.39 same day settlement (SDS) (ANS X9.100-180/X9.37)
A set of amendments to Regulation CC (12 CFR part 229) which specifies conditions under which a payor bank must settle for a check with a presenting bank in same-day funds.

3.40 short name (ANS X9.100-180/X9.37)
The abbreviated name assigned to a bank, typically by the Federal Reserve Bank.

3.41 substitute check (ANS X9.100-140/X9.90)
A paper reproduction of an original check as defined by the Check 21 Act and Regulation CC.

3.42 transaction code (/X9.100-160-1/ANS X9.13)
An optional code usually located in the On-Us field that can identify document type or handling. Usage is specified by the financial institution on which the check is written.

3.43 truncation (ANS X9.100-180/X9.37)
The conversion of the original item into electronic form.

4 File Structure

The use of record types in the standard allows a file to be structured in a manner closely matching a physical cash letter. This clause describes: a) the records that are mandatory and conditional within a file and b) the organization of the records in a file.

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4.1 Record Types

This file is comprised entirely of variable length records. See Annex D for more information.

The following are record types established for Electronic Exchange:

- File Header Record (Type 01)
- Cash Letter Header Record (Type 10)
- Bundle Header Record (Type 20)
- Check Detail Record (Type 25)
- Check Detail Addendum A Record (Type 26)
- Check Detail Addendum B Record (Type 27)
- Check Detail Addendum C Record (Type 28)
- Return Record (Type 31)
- Return Addendum A Record (Type 32)
- Return Addendum B Record (Type 33)
- Return Addendum C Record (Type 34)
- Return Addendum D Record (Type 35)
- Account Totals Record (Type 40)
- Non-Hit Totals Record (Type 41)
- Image View Detail Record (Type 50)
- Image View Data Record (Type 52)
- Image View Analysis Record (Type 54)
- Image Test Summary Record (Type 55)
- Image Test Detail Record (Type 56)
- Credit/Reconciliation Record (Type 61)
- Digital Certificate Record (Type 64)
- User Record (Type 68) – General Format Record
    - User Record (Type 68) – Format Type 001 – Payee Endorsement Record

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  - User Record (Type 68) – Format Type 002 – Destination Record

- Bundle Control Record (Type 70)
- Box Summary Record (Type 75)
- Routing Number Summary Record (Type 85)
- Cash Letter Control Record (Type 90)
- File Control Record (Type 99)

4.2 File Structure Requirements

In general, an Electronic Exchange file contains one or more cash letters. Cash letters contain one or more bundles that are destined for the institutions identified in the Cash Letter Header Records. Bundles within cash letters contain the Check Detail Records or Return Records and can contain image records. User Records (Type 68) – General Format Record (this does not apply to User Record (Type 68) – Format Type 001 – Payee Endorsement Record and User Record (Type 68) – Format Type 002 – Destination Record) can occur anywhere in the file between the File Header Record (Type 01) and File Control Record (Type 99), there is no direct relationship as to placement between User Records and all other records in the file and are therefore not specifically identified in the descriptions of the other records.

The following figures illustrate the ANS X9.100-180 hierarchy for cash letter and bundle structures.

- Figure 1 – X9.100-180 Forward and Return Cash Letter Hierarchy Diagram.
- Figure 1a – X9.100-180 Forward Presentment Bundle Hierarchy Diagram.
- Figure 1b – X9.100-180 Return Bundle Hierarchy Diagram.
- Figure 1c – X9.100-180 Credit/Reconciliation Record (Type 61) Hierarchy Diagram.
- Figure 2 – X9.100-180 Cash Letter With No Detail Hierarchy Diagram.

See Annex J for representative examples of file structures.

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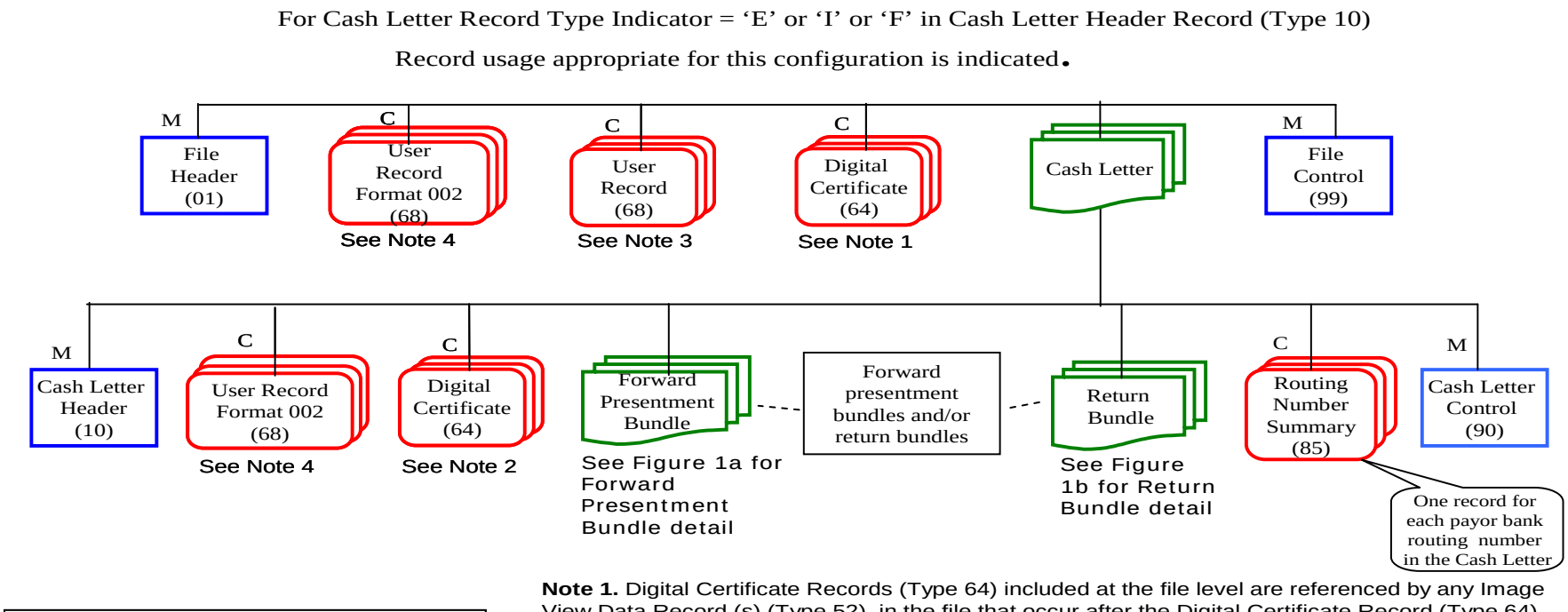
Figure 1 – X9.100-180 Forward and Return Cash Letter Hierarchy Diagram



Note 1. Digital Certificate Records (Type 64) included at the file level are referenced by any Image View Data Record (s) (Type 52) in the file that occur after the Digital Certificate Record (Type 64) . Refer to Clause 27.

Note 2. Digital Certificate Records (Type 64) included at the Cash Letter level are referenced by any Image View Data Record(s) (Type 52) in the same Cash Letter that occur after the Digital Certificate Record (Type 64). Refer to Clause 27.

Note 3. User Records (Type 68) can occur anywhere in the file between the File Header Record (Type 01) and File Control Record (Type 99). Each User Record (Type 68) only relates to the File, Cash Letter, Bundle, Item, or Image View with which it is used. The exact location of this Record shall be determined by the exchange partners. Refer to Clause 28 for details.

Note 4. User Record (Type 68) - Format 002 can occur within one (only) of File, Cash Letter, or Bundle. In each instance, the Record only relates to the File, Cash Letter, or Bundle within which it is used. Refer to Clause 30 for details.

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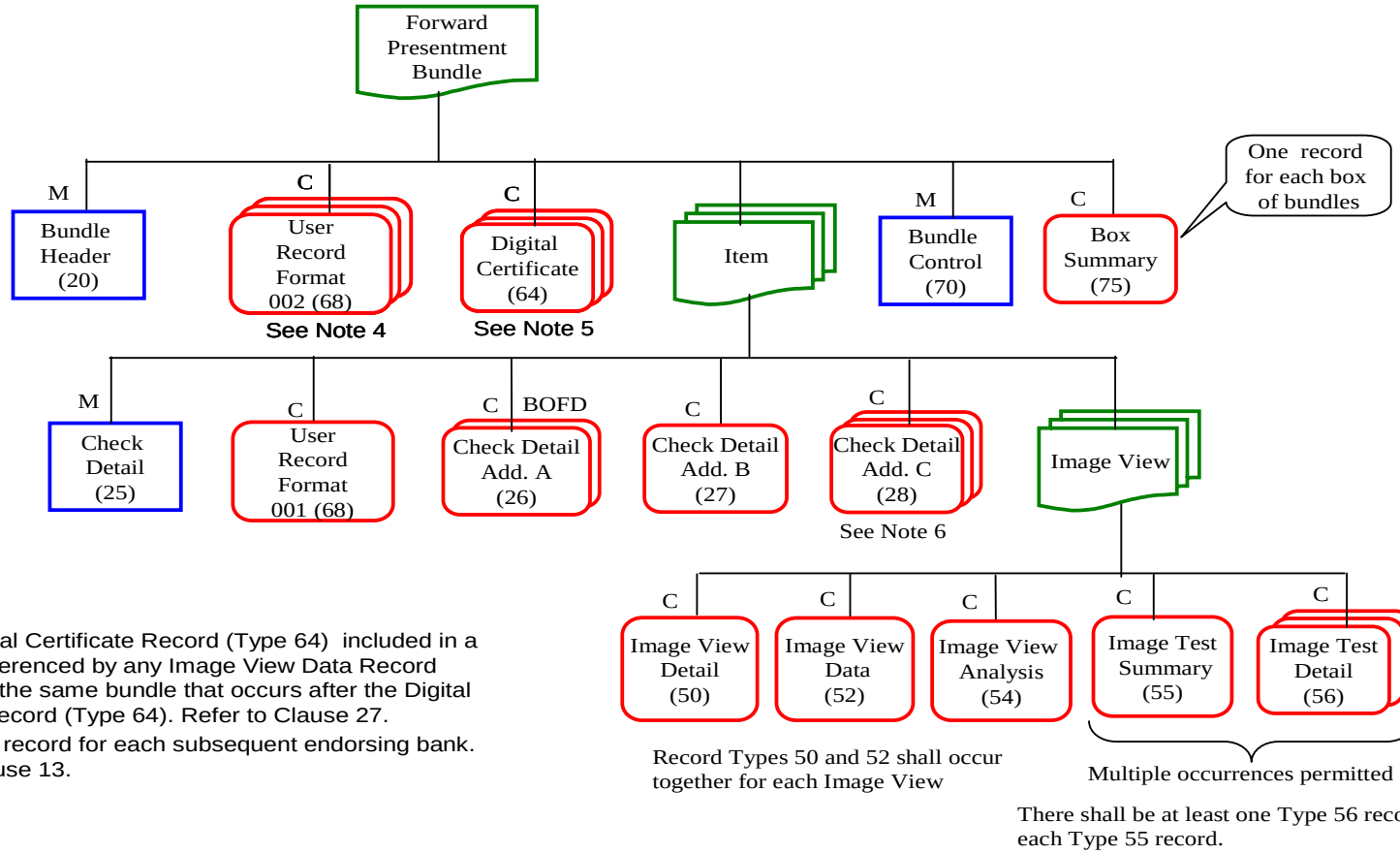
Figure 1a – X9.100-180 Forward Presentment Bundle Hierarchy Diagram

For Cash Letter Record Type Indicator = 'E' or 'I' or 'F' and
Collection Type Indicator = '00' or '01' or '12' in Cash Letter Header Record (Type 10)

Record usage appropriate for this configuration is indicated.



Note 5. Digital Certificate Record (Type 64) included in a Bundle is referenced by any Image View Data Record (Type 52) in the same bundle that occurs after the Digital Certificate Record (Type 64). Refer to Clause 27.

Note 6. One record for each subsequent endorsing bank. Refer to Clause 13.

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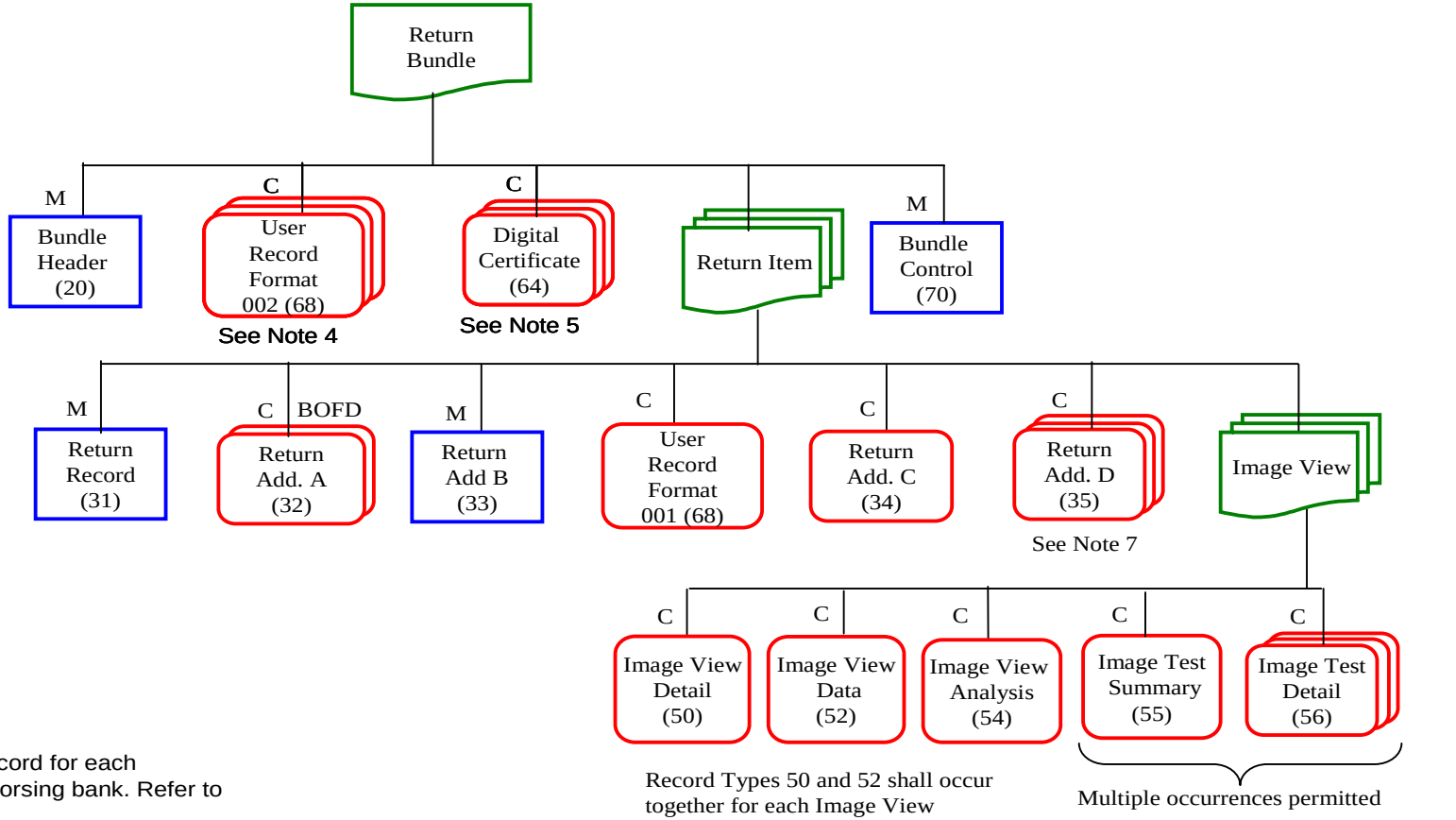
Figure 1b – X9.100-180 Return Bundle Hierarchy Diagram

For Cash Letter Record Type Indicator = ‘E’ or ‘I’ or ‘F’ and
Collection Type Indicator = ‘03’ or ‘05’ or ‘06’ or ‘07’ or ‘09’ in Cash Letter Header Record (Type 10)

Record usage appropriate for this configuration is indicated.



Note 7. One record for each subsequent endorsing bank. Refer to Clause 18.

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Figure 1c – X9.100-180 Credit/Reconciliation Record (Type 61) Hierarchy Diagram

Record usage appropriate for this configuration is indicated.

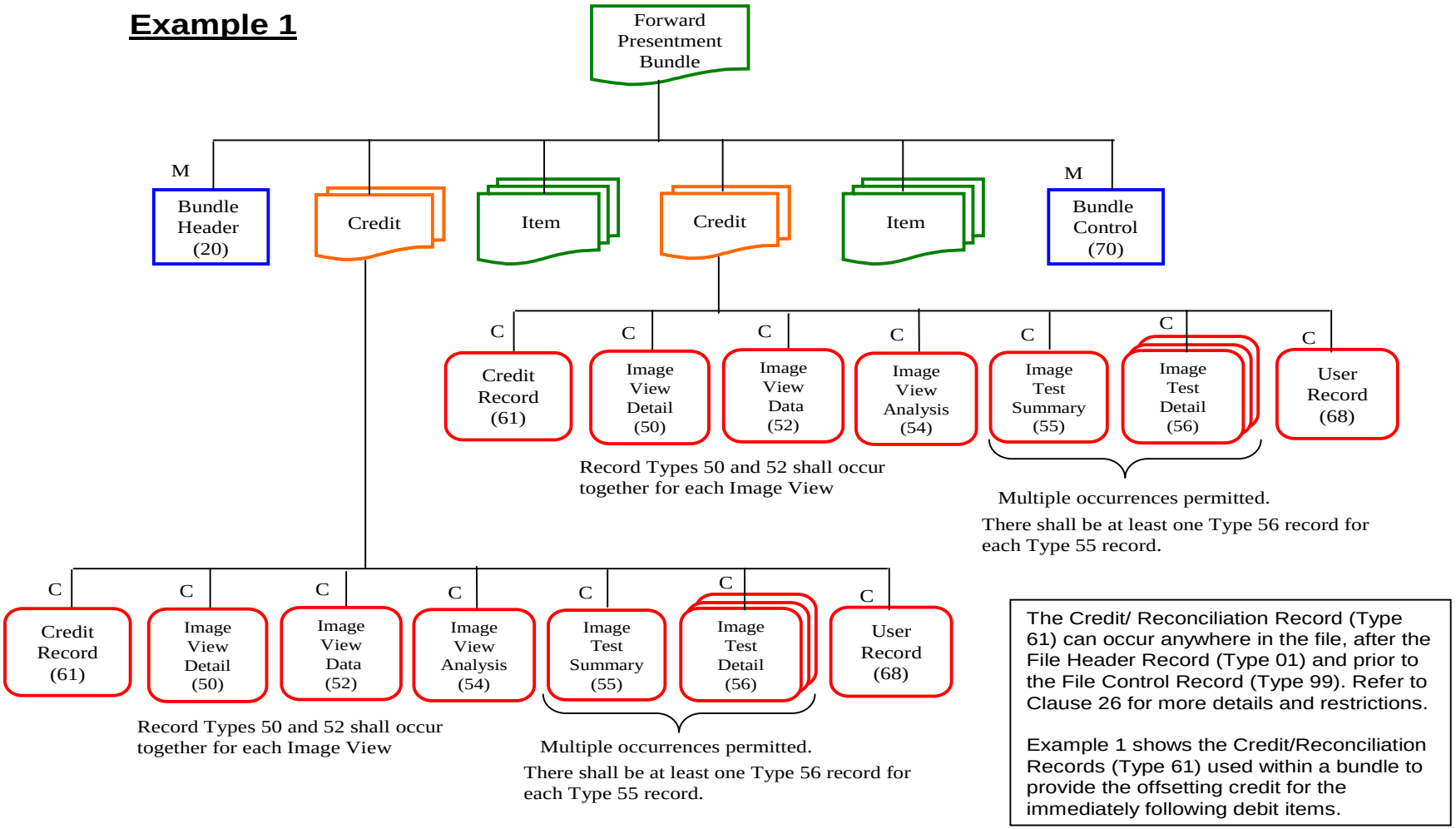

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Figure 1c – X9.100-180 Credit/Reconciliation Record (Type 61) Hierarchy Diagram (Cont'd)

Record usage appropriate for this configuration is indicated.

Example 2

In Example 2, the first Credit/ Reconciliation Record(s) (Type 61) encountered (after the Cash Letter Header Record (Type 10)) applies to all subsequent Bundles/ Items (debits) until another Credit Record, or the end of the Cash Letter Record (Type 99), is encountered. Type 5x Records that may be associated with a Credit/Reconciliation Record (Type 61) are not shown in order to enhance clarity.

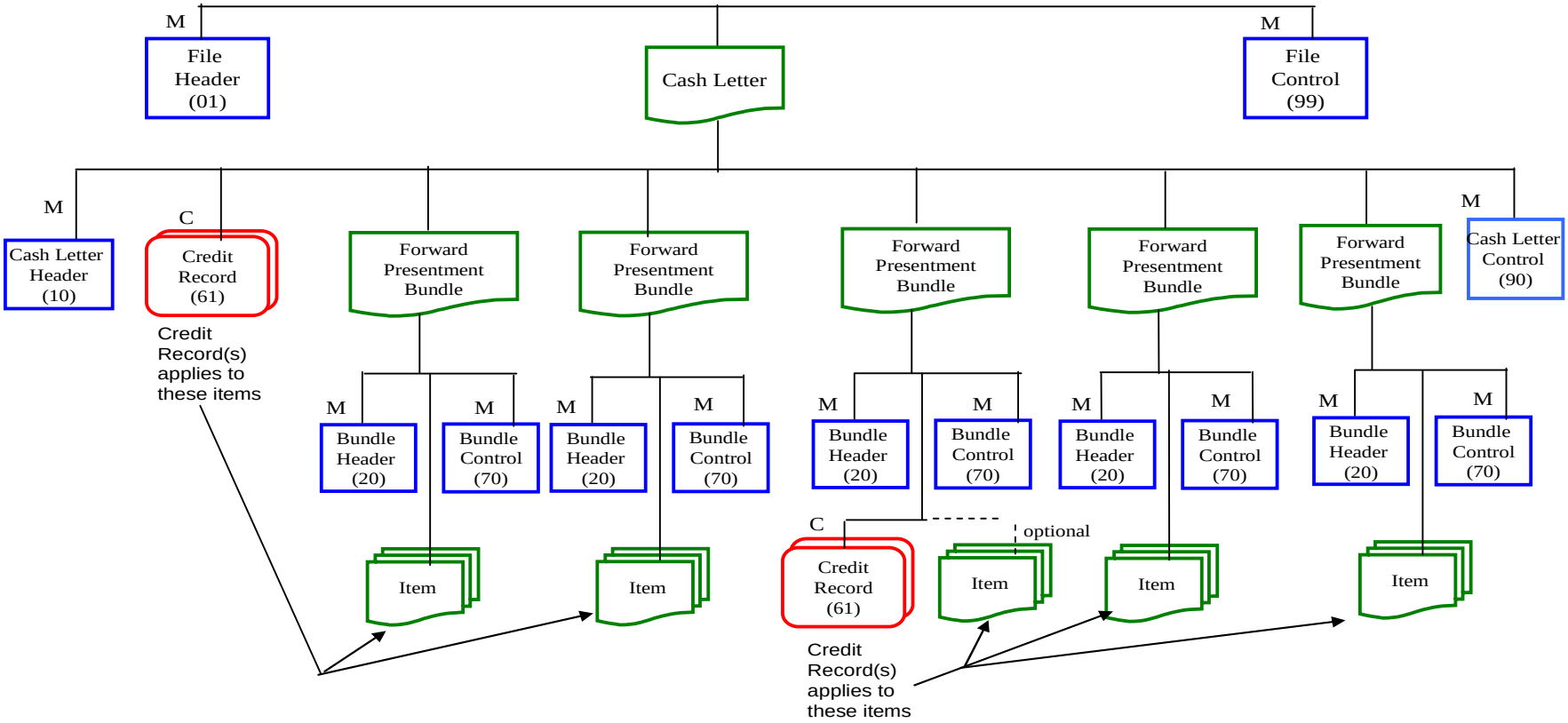

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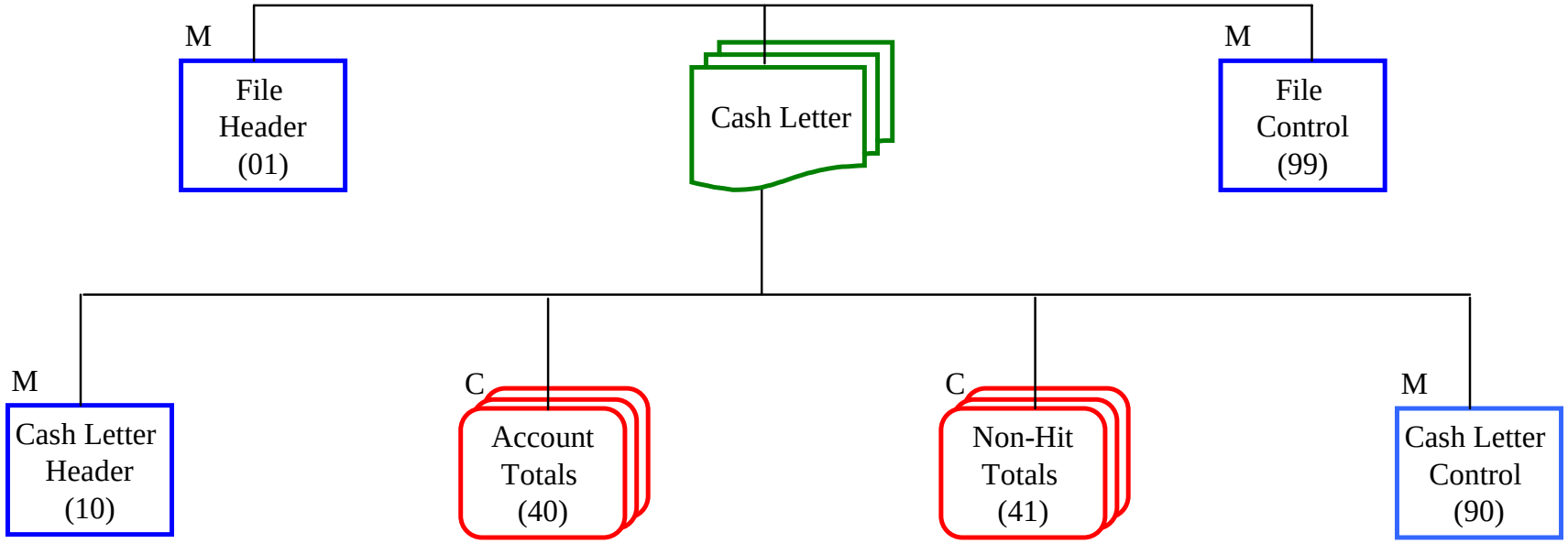
Figure 2 – X9.100-180 Cash Letter With No Detail Hierarchy Diagram

For Cash Letter Record Type Indicator = ‘N’ and
Collection Type Indicator = ‘10’ in Cash Letter Header Record (Type10)

Record usage appropriate for this configuration is indicated.



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5 Character and Field Data Type Specifications

The following are the names, abbreviations (in parentheses), and definitions for the characters and field data types permitted in this standard.

This standard allows for encoding data using either the 8-bit ASCII character set or the 8-bit EBCDIC character set. All characters and symbols in the file shall use the same encoding scheme. Certain fields are designated as binary data.

The ASCII character set used is officially known as ANSI_X3.4-1968 as defined in the ECMA registry (also known as ISO_646.irv:1991 or US-ASCII). The specific code page number is 367. An alternate acceptable character set for ASCII is the ISO_8859-1 character set as defined in the ECMA registry. This is commonly used on Intel (PC) platforms. It also called latin1. The specific code page number is 819. Any further references in this document to ASCII apply for either of these character sets.

The EBCDIC character set used is officially known as IBM037 as defined in "IBM NLS RM Vol2 SE09-8002-01, March 1990" (also known as cp037 or EBCDIC). The specific code page number is 37.

Fields designated as binary data are as follows:

Image View Data Record (Type 52)
- Digital Signature (Field 23)
- Digital Certificate (Field 26)
- Image Data (Field 27)
- Ancillary Data (Field 28)

Digital Certificate Record (Type 64)
- X.509 Digital Certificate (Field 8)

The coding scheme is determined by inspecting the fifth and sixth characters of the X9.100-180 file that have the value '01' (File Header Record Type 01, Field 1). The value '01' is defined in EBCDIC with the hexadecimal value 'F0F1' and in ASCII with the hexadecimal value '3031'. The first four bytes in the file make up the inserted length field for the File Header Record (Type 01) (refer to Annex D for additional information on the use of variable length records).

5.1 Basic Character Type Definitions

The complete set of character type definitions and their symbols is shown in Table 1. Character types shall be represented by their character abbreviation (i.e., "B" for the Blank character). Basic Character Types shall be used to construct Field Data Types in Clause 5.3.

5.1.1 Alphabetic Characters (A)

Alphabetic characters (A) are the upper case letters A through Z; the lower case letters a through z, and the blank (space) character. When lower case letters are used, they shall be interpreted to have the same meaning as their respective upper case letters, e.g., no distinction shall be made between the upper case letter A and the lower case letter a.

5.1.2 Blank (B)

The blank (" ") character (B) is defined in ASCII with the hexadecimal value '20' and in EBCDIC with the hexadecimal value '40'; also referred to as a space.

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Conditional fields that are fixed length and not used shall be filled with blank characters.

5.1.3 Numeric Characters (N)

Numeric characters (N) are the numbers zero (0) through nine (9).

5.1.4 Questionable Data Character – (Q)

The question mark ("?") character shall be used to represent the presence of a non-MICR character when the processing system cannot interpret the character, or to represent that the data being presented is "Questionable Data" (Q).

5.1.5 Special Printable Characters (S)

Special printable characters (S) are any printable characters with an ASCII hexadecimal value greater than '20' or EBCDIC hexadecimal value greater than '40' that are neither alphabetic nor numeric. Occurrences of values ASCII '00' – '1F' and EBCDIC '00' – '3F' are not valid.

5.2 MICR Special Characters (M)

The MICR special symbols (M) used for delineation of data on the MICR line do not have any direct equivalent ASCII or EBCDIC characters. Therefore, specific characters shall be assigned for use in interpreting these MICR symbols. These characters shall have the special meanings defined below only when used in fields directly read from the MICR line. The MICR system characters consist of the amount symbol, dash symbol, on-us symbol and transit (routing) symbol. When these same characters are used elsewhere in other fields they shall represent another meaning.

MICR characters, when used individually or together, shall be prefixed by a single upper case "M" character followed by their associated lower case abbreviation. For example, a data type that allows only numeric (N), blank (B), MICR can't read (Mc) and MICR dash (Md) characters would be denoted as NBMcd. When all MICR characters are to be included in unparsed MICR fields, the complete set of MICR characters shall be abbreviated MU for MICR Unparsed.

It should be noted that the MICR '0'-'9' is represented in this standard with Numeric characters (N) (See Clause 5.1.3).

5.2.1 MICR Amount Symbol (Ma)

The dollar sign character ("$") shall be used to represent the presence of the MICR Amount Symbol.

5.2.2 MICR Can't Read (Mc)

The asterisk character ("*") shall be used to represent the presence of a character when the processing system cannot interpret the MICR data.

5.2.3 MICR Dash Symbol (Md)

The dash character ("-") shall be used to represent the presence of the MICR Dash Symbol.

5.2.4 MICR On-Us Symbol (Mo)

The forward slash character ("/") shall be used to represent the presence of the MICR On-Us Symbol.

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5.2.5 MICR Transit (Routing) Symbol (Mr)

The number (pound) sign character ("#") shall be used to represent the presence of the MICR Transit (Routing) Symbol.

5.3 Field Data Types

A single data type shall define a Field Data Type. Field Data Types shall always have a defined justification (left or right) and fill character (zero or blank). See Table 2 for a summary of all defined Field Data Types and their associated abbreviations, justification, fill character, and Basic Character Types included in a given Field Data Type.

Justification is the act of aligning data as it is placed into a field, based on its right or left-most non-fill character. Justification only applies to fixed length fields. A field is right justified when the data is aligned to the right based on its right-most non-fill character. A field is left justified when the data is aligned to the left based on its left-most non-fill character.

Fill characters are the characters used to fill up unused bytes in a field. Fill characters shall be blanks (B) or zeros as defined in clauses 5.3.1 through 5.3.14. In right justified fields, fill values start at the left-most character in the field filling rightward to the first non-fill character. In left justified fields, fill values start at the right-most character in the field filling leftward to the first non-fill character.

5.3.1 All Blank (AB)

The All Blank field data type indicates that the field is filled with blank (B) characters (see Clause 5.1.2). The All Blank field is only used in Reserved and User fields. As the field is completely filled with blanks, justification is not applicable.

5.3.2 Alphabetic (A)

Alphabetic fields are limited to the alphabetic characters (see Clause 5.1.1). The field data shall be left justified and blank filled.

5.3.3 Alphanumeric (AN)

Alphanumeric fields are limited to the alphabetic characters (A) and the numeric characters (N). The field data shall be left justified and blank filled.

5.3.4 Alphanumeric/Comma Delimited (ANC)

Alphanumeric/Comma delimited fields comprise alphabetic (A), numeric (N), minus ("-"), and plus ("+") characters separated by comma (",") characters. Rules for using the Alphanumeric/Comma delimited field data type are contained in Annex E.

5.3.5 Alphanumeric/Special (ANS)

Alphanumeric/Special fields are limited to the alphabetic (A), numeric (N), and special printable (S) characters (see Clause 5.1.5). The field data shall be left justified and blank filled.

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5.3.6 Binary

Binary fields contain data that is composed of a sequence of bytes where each byte ranges in value from binary 00000000 to 11111111 (8-bit encoding). The syntax, semantics, and number of bytes in the string are specified in the standard for each occurrence of the binary data type. Justification and character filling are not applicable.

5.3.7 Numeric (N)

Numeric fields are limited to the numeric characters (N) (see Clause 5.1.3). The field data shall be right justified and zero filled. Numeric fields are only used for mandatory numeric fields.

5.3.8 Numeric/Blank Fill (NB)

Numeric/Blank Fill fields are limited to the numeric characters (N) and the blank character (B). Blanks shall not be embedded within the numeric digits. They may be used only to fill out a field when the numeric value length is shorter than the actual field length. The field data shall be left justified and blank filled.

5.3.9 Numeric/Blank Fill/Dash (NBD)

Numeric/Blank/Dash fields are limited to the numeric (N), blank (B), and dash ("-") characters. Blanks shall not be embedded within the numeric digits. This field shall be left justified and blank filled.

5.3.10 Numeric/Blank Fill/Questionable Data (NBQ)

Numeric/Blank Fill/Questionable Data fields are limited to the numeric (N), blank (B), and questionable data (Q) question mark ("?") characters. Blanks shall not be embedded within the numeric digits. The field data shall be left justified and blank filled.

5.3.11 Numeric/Blank/MICR Can't Read (NBMc)

Numeric/Blank/MICR can't read fields are limited to the numeric (N), blank (B), and MICR can't read (Mc) asterisk ("*") characters. No other MICR symbols are allowed. This field shall be right justified and blank filled.

5.3.12 Numeric/Blank/MICR Can't Read and Dash (NBMcd)

Numeric/Blank/MICR can't read and dash fields are limited to the numeric (N), blank (B), MICR can't read (Mc) asterisk ("*"), and MICR dash (Md) ("-") characters. No other MICR symbols are allowed. This field shall be right justified and blank filled.

5.3.13 Numeric/Blank/MICR Can't Read, Dash, and On-Us (NBMcdo)

Numeric/Blank/MICR On-Us fields are limited to the numeric (N), blank (B), MICR can't read (Mc) asterisk ("*"), MICR dash (Md) ("-"), and MICR On-Us (Mo) slash ("/") characters. No other MICR symbols are allowed. This field shall be right justified and blank filled.

5.3.14 Numeric/Blank/MICR Unparsed (NBMU)

Numeric/Blank/MICR unparsed fields are limited to the numeric (N), blank (B), MICR amount (Ma) ("$"), MICR can't read (Mc) asterisk ("*"), MICR dash (Md) ("-"), MICR On-Us (Mo) slash ("/"), and MICR Routing (Mr) number (pound) ("#") characters (see Clause 5.2). This field shall be right justified blank filled.

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5.4 General Field Rules

The following shall apply to all fields in all records in the standard:

a) If a field is mandatory and has predefined values, it shall contain one of these predefined values or it is invalid.

b) If a field is conditional, is used, and has predefined values, it shall contain one of these predefined values or it is invalid.

c) If a field is conditional, fixed length, and not used, it shall be filled with blank characters.

d) If a field is conditional, variable length, and not used, it shall be omitted (i.e., length = "0").

5.5 User Fields

Most records in this standard provide for User Fields. Users of the standard utilize these fields at their discretion. The standard does not define particular uses for, or the internal contents of, these fields. In many cases, the User Fields within the records are more than one character in length. In most cases User Fields are fixed length and shall be maintained as fixed length fields. However, in other cases User Fields are variable length and the users are free to determine both its length and usage. Users are free to use the field as a single field or divide it into multiple fields.

Table 1 – Character Type Definitions Summary

The following table contains the Character Type Definitions, its associated abbreviations, allowable characters, printable symbols and their ASCII and EBCDIC hex values

Character Type Definitions	Abbr	Printable Symbol	ASCII Hex	EBCDIC Hex
Alphabetic characters	(A)	a – z A – Z “ ”	61-7A 41-5A 20	81-89, 91-99, A2-A9 C1-C9, D1-D9, E2-E9 40
Blank character	(B)	“ ”	20	40
MICR amount Symbol character	(Ma)	$	24	5B
MICR can’t read Symbol character	(Mc)	*	2A	5C
MICR dash Symbol character	(Md)	-	2D	60
MICR OnUs Symbol character	(Mo)	/	2F	61
MICR Transit (routing) Symbol character	(Mr)	#	23	7B
Numeric characters	(N)	0 1 2 3 4 5 6 7 8 9	30-39	F0-F9
Questionable Data Character	(Q)	?	3F	6F
Special printable characters	(S)	! " # $ % & ’ ( ) * + , - . / : ; < = > ? @ [\ ] ^ _ ` { | } ~	21-2F 3A-40 5B-60 7B-7E	5A, 7F, 7B, 5B, 6C, 50, 7D, 4D, 5D, 5C, 4E, 6B, 60, 4B, 61 7A, 5E, 4C, 7E, 6E, 6F, 7C 4A, E0, 4F, 5F, 6D, B9 C0, 6A, D0, A1
Binary data	Binary	Not applicable	00-FF	00-FF

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Table 2 – Field Data Types

	Abbr	Just	Char Fill	Basic Character Type					
Field Data Type				**(B)**	**(A)**	**(N)**	**(Q)**	**(S)**	**(M)**
All Blank	(AB)	n/a	B	" "					
Alphabetic	(A)	left	B	" "	a to z A to Z				
Alphanumeric	(AN)	left	B	" "	a to z A to Z	0 to 9			
Alphanumeric/Comma Delimited	(ANC)	n/a[1]	B		a to z A to Z	0 to 9		- , +	
Alphanumeric/Special	(ANS)	left	B	" "	a to z A to Z	0 to 9		!"#$%&'( )*+,-./ :;<=>?@ [\]^_` {|}~	
Binary	Binary	n/a[2]	n/a[2]						
Numeric	(N)	right	0			0 to 9			
Numeric/Blank Fill	(NB)	left	B	" "		0 to 9			
Numeric/Blank Fill/Dash	(NBD)	left	B	" "		0 to 9		-	
Numeric/Blank/Questionable Data	(NBQ)	left	B	" "		0 to 9	?		
Numeric/Blank/MICR Can't Read	(NBMc)	right	B	" "		0 to 9			*
Numeric/Blank/MICR Can't Read and Dash	(NBMcd)	right	B	" "		0 to 9			* -
Numeric/Blank/MICR can't read, dash, OnUs	(NBMcdo)	right	B	" "		0 to 9			* - /
Numeric/Blank/MICR Unparsed	(NBMU)	right	B	" "		0 to 9			* $ - / #

[1] Justification for an ANC type field is not applicable as it is a variable length field with no leading or trailing blank characters. Its length should match the number of characters from the first non-blank character to the last non-blank character.

[2] Justification and fill for a binary type field are not applicable as it is a variable length field of bits (mod 8) and not to be interpreted as characters.

6 Table Headings Title Descriptions

The table headings and the titles used are described below.

6.1 Field

Contains sequential field numbers.

6.2 Field Name

Contains the name of the field.

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6.3 Usage

Identifies whether the field shall be mandatory or conditional:

a) Mandatory (M) – the data element shall always be present; and

b) Conditional (C) – the data element shall be present only under certain conditions.

6.4 Position

Contains the starting and ending location of each field within the record.

6.5 Size

Contains the number of characters within the field.

6.6 Type

Identifies the kind of data that shall be valid for the field. The type indicates, in general, the allowable characters permitted, but may be restricted to a subset of the type. When a restriction exists, the allowable character or characters are defined in the section where the field is described.

6.7 Format

Describes the unique structure for a particular field, when one exists.

6.8 Defined Values

Defined Values serves two purposes. For some fields, it provides a specific value or a list of specific values and the interpretation of each value. Second, for some fields it provides the allowable range of values.

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7 File Header Record (Type 01)

The File Header Record is mandatory and contains fourteen fields. It is the first record of the file. The immediate origin institution (the institution sending the file) creates the data in this record. If two or more of the User Record (Type 68) Format Type 002, Certificate Record (Type 64) and Credit/Reconciliation Record (Type 61) is immediately following this record they shall appear in descending numerical order based on the Record Type number.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Standard Level	M	03 – 04	2	N
3	File Type Indicator	M	05 – 05	1	AN
4	Immediate Destination Routing Number	M	06 – 14	9	NBD
5	Immediate Origin Routing Number	M	15 – 23	9	NBD
6	File Creation Date	M	24 – 31	8	N
7	File Creation Time	M	32 – 35	4	N
8	Resend Indicator	M	36 – 36	1	A
9	Immediate Destination Name	C	37 – 54	18	ANS
10	Immediate Origin Name	C	55 – 72	18	ANS
11	File ID Modifier	C	73 – 73	1	AN
12	Country Code	C	74 – 75	2	AN
13	User Field	C	76 – 79	4	ANS
14	Reserved	M	80 – 80	1	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

7.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '01' File Header Record

7.2 Standard Level

A code that identifies the version of the standard used to create the file.

Usage: Mandatory
Position: 03 – 04
Size: 2
Type: N Numeric

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Defined Values: '01' ANS X9.37-1994
'02' ANS X9.37-2001
'03' DSTU X9.37-2003
'20' ANS X9.100-180-2006

7.3 File Type Indicator

A code indicating whether the file is a test file or a production file. The file can be further identified as either financial or non-financial exchanges (e.g., files for actual cash letter exchange, printing, or data movement without settlement).

Usage: Mandatory
Position: 05 – 05
Size: 1
Type: AN Alphanumeric
Defined Values: 'P' Production Financial Exchange File
'T' Test Financial Exchange File
'A' Production Non-Financial File
'B' Test Non-Financial File

7.4 Immediate Destination Routing Number

A number that identifies the institution that receives the file.

Usage: Mandatory
Position: 06 – 14
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit

or

TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number

or

Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

7.5 Immediate Origin Routing Number

A number that identifies the institution that originates the file.

Usage: Mandatory
Position: 15 – 23
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier

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C Check Digit

or

TTTTT-FFF, where:

TTTTT Transit Number
FFF Canadian Financial Institution Number

or

Alternate Format for a number that identifies a non-financial institution:

NNNNNNNNN

This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

7.6 File Creation Date

The year, month and day the immediate origin institution creates the file. The default date shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Mandatory
Position: 24 – 31
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

7.7 File Creation Time

The time the immediate origin institution creates the file. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Mandatory
Position: 32 – 35
Size: 4
Type: N Numeric
Format: hhmm, where:
hh hour
mm minute
Defined Values: hh '00' through '23'
mm '00' through '59'

7.8 Resend Indicator

A code that indicates whether the file has been previously transmitted in its entirety.

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Usage: Mandatory
Position: 36 – 36
Size: 1
Type: A Alphabetic
Defined Values: 'Y' resend file – File contains the same data as a previously sent file. All fields are the same as the original file except this field.
'N' original file – This is the original file.

7.9 Immediate Destination Name

The short name, as defined in this standard, identifies the institution that receives the file.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 37 – 54
Size: 18
Type: ANS Alphanumeric/Special

7.10 Immediate Origin Name

The short name, as defined in this standard, identifies the institution that sends the file.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 55 – 72
Size: 18
Type: ANS Alphanumeric/Special

7.11 File ID Modifier

A code used to uniquely identify each file created on the same date, at the same time and between the same exchanging institutions.

Usage: Conditional
Shall be present if all of the following fields in a previous file are equal to the same fields in this file: File Header Record (Type 01), Field 4, Field 5, Field 6 and Field 7.
Position: 73 – 73
Size: 1
Type: AN Alphanumeric

7.12 Country Code

A code used to identify the country in which the payor bank is located.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 74 – 75
Size: 2
Type: AN Alphanumeric

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7.13 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 76 – 79
Size: 4
Type: ANS Alphanumeric/Special

7.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 80 – 80
Size: 1
Type: AB All Blank

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8 Cash Letter Header Record (Type 10)

The Cash Letter Header Record is mandatory and contains fourteen fields. It always follows a File Header Record (Type 01) or Credit/Reconciliation Record (Type 61) or Digital Certificate Record (Type 64) or User Record (Type 68) Format Type 002. In the case of multiple cash letters in the file, the additional Cash Letter Header Records shall follow a Cash Letter Control Record (Type 90). If two or more of the User Record (Type 68) Format Type 002, Certificate Record (Type 64) and Credit/Reconciliation Record (Type 61) is immediately following this record they shall appear in descending numerical order based on the Record Type number. The data in the fields are created by the ECE institution, which may or may not be the Bank of First Deposit (BOFD).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Collection Type Indicator	M	03 – 04	2	N
3	Destination Routing Number	M	05 – 13	9	NBD
4	ECE Institution Routing Number	M	14 – 22	9	NBD
5	Cash Letter Business Date	M	23 – 30	8	N
6	Cash Letter Creation Date	M	31 – 38	8	N
7	Cash Letter Creation Time	M	39 – 42	4	N
8	Cash Letter Record Type Indicator	M	43 – 43	1	AN
9	Cash Letter Documentation Type Indicator	C	44 – 44	1	AN
10	Cash Letter ID	C	45 – 52	8	AN
11	Originator Contact Name	C	53 – 66	14	ANS
12	Originator Contact Phone Number	C	67 – 76	10	NB
13	Work Type	C	77 – 78	2	AN
14	User Field	C	79 – 80	2	ANS

Note: All fixed length conditional fields that are not used shall be filled with banks.

8.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '10' Cash Letter Header Record

8.2 Collection Type Indicator

A code used to identify the type of cash letter. It shall be set to the same value as the Collection Type Indicator (Field 2) in the Bundle Header Record(s) (Type 20) in that cash letter, if Collection Type Indicator is not set to Defined Value '99'. Bundles that do not carry monetary value (Collection Type Indicator is set to Defined Value of '00') shall not be mixed with other bundles that do carry monetary value. Bundles with Defined Values of '05' or

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'06' or '09' shall not be mixed with bundles of other Defined Values in the same Cash Letter. Codes '80' – '85' are defined for Canadian use only; codes '86' – '89' are reserved for future Canadian use.

Usage: Mandatory
Position: 03 – 04
Size: 2
Type: N Numeric
Defined Values:
'00' Preliminary Forward Information – Used when data may change and the information is treated as not final.
'01' Forward Presentment – For the collection and settlement of checks (demand instruments). Data are treated as final.
'03' Return – For the return of check(s). Transaction carries value. Data are treated as final.
'05' Preliminary Return Notification – For the notification of return of check(s). Transaction carries no value. Used to indicate that an item may be returned.
'06' Final Return Notification – For the notification of return of check(s). Transaction carries no value. Used to indicate that an item will be returned.
'07' Administrative Return – For the return of check(s). Transaction carries value. Data are treated as final (e.g., poor quality image, missing image, etc.).
'09' Delayed Processing Notification – For notification of delay in handling the transaction. Used to indicate that an item was not processed as originally planned. Transaction carries no value.
'10' Account Totals – Used to report information at the account level. Defined Value of the Cash Letter Record Type Indicator (Field 8) shall be set to 'N'.
'12' Deposit – For the deposit of checks. Transaction carries value. Data are treated as final.
'20' No Detail – There are no detail records contained within the bundle or cash letter. Defined Value of the Cash Letter Record Type Indicator (Field 8) shall be set to 'N'.
'80' Unqualified (for Canadian Use Only)
'81' Large items (for Canadian Use Only)
'82' Request for re-scan (for Canadian Use Only)
'83' Re-scanned items (for Canadian Use Only)
'84' Item on collection (for Canadian Use Only)
'85' Paid or un-paid items on collection
'86' – '89' Reserved for future Canadian Use
'99' Bundles not the same collection type.

8.3 Destination Routing Number

A number used to identify the institution that receives and processes the cash letter or the bundle.

Usage: Mandatory
Position: 05 – 13
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number
or

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Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

8.4 ECE Institution Routing Number

A number that identifies the institution that creates the Cash Letter Header Record.

Usage: Mandatory
Position: 14 – 22
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution identifier
C	Check digit

or

TTTTT-FFF, where:

TTTTT	Transit Number
FFF	Canadian Financial Institution Number

or

Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

8.5 Cash Letter Business Date

The year, month and day that designates the business date of the cash letter. The date typically assigned to research this cash letter.

Usage: Mandatory
Position: 23 – 30
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:

YYYY	year
MM	month
DD	day

Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

8.6 Cash Letter Creation Date

The year, month and day the cash letter is created. The default date shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

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Usage: Mandatory
Position: 31 – 38
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

8.7 Cash Letter Creation Time

The time the cash letter is created. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Mandatory
Position: 39 – 42
Size: 4
Type: N Numeric
Format: hhmm, where:
hh hour
mm minute
Defined Values: hh '00' through '23'
mm '00' through '59'

8.8 Cash Letter Record Type Indicator

A code that indicates the presence of records or the type of records contained in the cash letter. If an image is associated with any (even one) Check Detail Record (Type 25), the cash letter must have a Cash Letter Record Type Indicator of Defined Value of 'I' or 'F'. See Annex B for the relationship of this field to the Cash Letter Documentation Type Indicator (Field 9).

Usage: Mandatory
Position: 43 – 43
Size: 1
Type: AN Alphanumeric
Defined Values:
'N' No electronic check records or image records (Type 2x's, 3x's, 5x's); e.g., Account Totals only or an empty cash letter.
'E' Cash letter contains electronic check records with no images (Type 2x's and 3x's only).
'I' Cash letter contains electronic check records (Type 2x's, 3x's) and image records (Type 5x's).
'F' Cash letter contains electronic check records (Type 2x's and 3x's) and image records (Type 5x's) that correspond to a previously sent cash letter (i.e., 'E' file). The fields in this file that contain posting data shall not be changed from the previously sent cash letter. Fields three through seven of this record shall equal the corresponding fields in a cash letter with a Cash Letter Record Type Indictor of Defined Value of 'E'. The records shall be in the same order. The Cash Letter Debit Item Count (Field 3) and Cash Letter Debit Total Amount (Field 4) and Cash Letter Credit Item Count (Field 8) and Cash Letter Credit Total Amount (Field 9) of the Cash Letter Control Record (Type 90) with a Cash Letter Record Type Indicator of Defined Value of 'F' must equal the corresponding fields in a cash letter with a Cash Letter Record Type Indicator of Defined Value of 'E'.

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8.9 Cash Letter Documentation Type Indicator

A code that indicates the type of documentation that supports all check records in the cash letter. This code indicates whether or not the items contained in the cash letter are the same type. This field supersedes the Documentation Type Indicator (Field 8) in the Check Detail Record (Type 25) or the Return Documentation Type Indicator (Field 6) in the Return Addendum B Record (Type 33) or Documentation Type Indicator (Field 9) in the Credit/Reconciliation Record (Type 61) for all Defined Values except 'Z' Not Same Type. In the case of a Defined Value of 'Z', the Documentation Type Indicator (Field 8) in the Check Detail Record (Type 25) or the Return Documentation Type Indicator (Field 6) in the Return Addendum B Record (Type 33) or Documentation Type Indicator (Field 9) in the Credit/Reconciliation Record (Type 61) takes precedent. See Annex B for the relationship of this field to the Cash Letter Record Type Indicator (Field 8).

Usage: Conditional
Shall be present when Field 8 Defined Values equals 'E', 'I' or 'F'.
Position: 44 – 44
Size: 1
Type: AN Alphanumeric
Defined Values:

'A'	No image provided, paper provided separately
'B'	No image provided, paper provided separately, image upon request
'C'	Image provided separately, no paper provided
'D'	Image provided separately, no paper provided, image upon request
'E'	Image and paper provided separately
'F'	Image and paper provided separately, image upon request
'G'	Image included, no paper provided
'H'	Image included, no paper provided, image upon request
'I'	Image included, paper provided separately
'J'	Image included, paper provided separately, image upon request
'K'	No image provided, no paper provided
'L'	No image provided, no paper provided, image upon request
'M'	No image provided, Electronic Check provided separately
'Z'	Not Same Type – Documentation associated with each item in Cash Letter will be different. The Check Detail Record (Type 25) or Return Addendum B Record (Type 33) or Credit/Reconciliation Record (Type 61) has to be interrogated for further information.

8.10 Cash Letter ID

A code used to identify the cash letter, assigned by the institution that creates the cash letter.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 45 – 52
Size: 8
Type: AN Alphanumeric

8.11 Originator Contact Name

A contact at the institution that creates the cash letter.

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Usage: Conditional
Shall be present only under clearing arrangements.
Position: 53 – 66
Size: 14
Type: ANS Alphanumeric/Special

8.12 Originator Contact Phone Number

The phone number used to contact the institution that creates the cash letter.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 67 – 76
Size: 10
Type: NB Numeric/Blank Fill

8.13 Work Type

A code used to specify the work type.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 77 – 78
Size: 2
Type: AN Alphanumeric
Defined Values;
‘01’ City
’02 City Group
‘03’ City Fine Sort
‘04’ RCPC
‘05’ RCPC Group
‘06’ RCPC Fine Sort
‘07’ High Dollar Group Sort
‘08’ Country
‘09’ Country Group Sort
‘10’ Country Fine Sort
‘11’ Other District
‘12’ Other District Group Sort
‘13’ Mixed
‘14’ High Volume Mixed (Master Account option)
‘15’ Electronic Group Sort
‘16’ Government Item Fine Sort Deposits
‘17’ Postal Money Order Fine Sort Deposits
‘18’ Reserved for future X9 use
‘19’ Reserved for future X9 use
‘20’ Reserved for future X9 use
‘21’ Reserved for future X9 use
‘22’ Reserved for future X9 use
‘23’ Reserved for future X9 use
‘24’ Reserved for future X9 use
‘25’ Reserved for future X9 use
‘26’ Mixed
‘27’ High Volume Mixed
‘28’ Payor Bank Group Sort
‘29’ Government Item Fine Sort Deposits

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‘30’ Postal Money Order Fine Sort Deposits
‘31’ Aggregation Fed Work Type I
‘32’ Aggregation Fed Work Type II
‘33’ Aggregation Fed Work Type III
‘34’ Aggregation Fed Work Type IV
‘35’ Mixed (non-iCPCS to iCPCS)
‘36’ Mixed (iCPCS to iCPCS)
’37’ – ’60’ Reserved for future Federal Reserve Use
‘61’ SDS
’62’ CLHS Clearing House
’63’ Unqualified Returns
‘64’ Mixed qualified
‘65’ Mixed unqualified
‘66’ Internal
’67’ – ‘90’ Reserved for future Private Sector Codes
’91’ Canadian Paper Debits
’92’ U.S. Paper Debits
‘93’ CDN Paper Credits (Bill payments in CDN currency)
‘94’ U.S. Paper Credits (Bill payments in US currency)
’95 – ‘99’ Reserved for future Canadian Use

8.14 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 79 – 80
Size: 2
Type: ANS Alphanumeric/Special

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9 Bundle Header Record (Type 20)

The Bundle Header Record is conditional and contains thirteen fields. It shall be present when the Cash Letter Record Type Indicator (Field 8) in the Cash Letter Header Record (Type 10) is not set to 'N'. It always follows a Cash Letter Header Record (Type 10) or Credit/Reconciliation Record (Type 61) or Certificate Record (Type) 64) or User Record (Type 68) Format Type 002 unless the cash letter contains multiple bundles. In the case of multiple bundles in the Cash Letter, the additional Bundle Header Records shall follow a Bundle Control Record (Type 70), or a Box Summary Record (Type 75). If two or more of the User Record (Type 68) Format Type 002, Certificate Record (Type 64) and Credit/Reconciliation Record (Type 61) is immediately following this record they shall appear in descending numerical order based on the Record Type number. The data in this record is created by the ECE institution, which may or may not be the Bank of First Deposit (BOFD).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Collection Type Indicator	M	03 – 04	2	N
3	Bundle Destination Routing Number	M	05 – 13	9	NBD
4	Bundle ECE Institution Routing Number	M	14 – 22	9	NBD
5	Bundle Business Date	M	23 – 30	8	N
6	Bundle Creation Date	C	31 – 38	8	NB
7	Bundle ID	C	39 – 48	10	AN
8	Bundle Sequence Number	C	49 – 52	4	NB
9	Cycle Number	C	53 – 54	2	AN
10	Return Location Routing Number	C	55 – 63	9	NBD
11	Bundle Creation Time	C	64 – 67	4	NB
12	User Field	C	68 – 73	6	ANS
13	Reserved	M	74 – 80	7	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

9.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '20' Bundle Header Record

9.2 Collection Type Indicator

A code used to identify the type of bundle. It shall be set to the same value as the Collection Type Indicator (Field 2) in the Cash Letter Header Record (Type 10) within which the bundle is contained unless the Collection Type Indicator (Field 2) in the Cash Letter Header Record (Type 10) is set to Defined Value '99'. Codes '80' – '85' are defined for Canadian use only; codes '86' – '89' are reserved for future Canadian use.

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Usage: Mandatory
Position: 03 – 04
Size: 2
Type: N Numeric
Defined Values:
‘00’ Preliminary Forward Information – Used when data may change and the information is treated as not final.
‘01’ Forward Presentment – For the collection and settlement of checks (demand instruments). Data are treated as final.
‘03’ Return – For the return of check(s). Transaction carries value. Data are treated as final.
‘05’ Preliminary Return Notification – For the notification of return of check(s). Transaction carries no value. Used to indicate that an item may be returned.
‘06’ Final Return Notification – For the notification of return of check(s). Transaction carries no value. Used to indicate that an item will be returned.
‘07’ Administrative Return – For the return of check(s). Transaction carries value. Data are treated as final (e.g., poor quality image, missing image, etc).
‘09’ Delayed Processing Notification – For notification of delay in handling the transaction. Used to indicate that an item was not processed as originally planned. Transaction carries no value.
‘12’ Deposit – For the deposit of checks. Transaction carries value. Data are treated as final.
‘80’ Unqualified (for Canadian use only)
‘81’ Large items (for Canadian use only)
‘82’ Request for re-scan (for Canadian use only)
‘83’ Re-scanned items (for Canadian use only)
‘84’ Item on collection (for Canadian use only)
‘85’ Paid or un-paid items on collection (for Canadian use only)
’86 - 89’ Reserved for future Canadian Use

9.3 Bundle Destination Routing Number

A number used to identify the institution that receives and processes the cash letter or the bundle.

Usage: Mandatory
Position: 05 – 13
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number
or
Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

9.4 Bundle ECE Institution Routing Number

A number that identifies the institution that creates the Bundle Header Record.

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Usage: Mandatory
Position: 14 – 22
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number
or
Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

9.5 Bundle Business Date

The year, month and day that designates the business date of the bundle. The date typically assigned to research this bundle.

Usage: Mandatory
Position: 23 – 30
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

9.6 Bundle Creation Date

The year, month and day the bundle is created. The default shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 31 – 38
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

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9.7 Bundle ID

A number used to identify the bundle, assigned by the institution that creates the bundle. This number shall be unique within the Cash Letter.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 39 – 48
Size: 10
Type: AN Alphanumeric

9.8 Bundle Sequence Number

A number assigned by the institution that creates the bundle. Usually denotes the relative position of the bundle within the cash letter. This number shall be unique within the Cash Letter.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 49 – 52
Size: 4
Type: NB Numeric/Blank Fill

9.9 Cycle Number

A code assigned by the institution that creates the bundle. Denotes the cycle under which the bundle is created.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 53 – 54
Size: 2
Type: AN Alphanumeric

9.10 Return Location Routing Number

A Routing Number specified by the Institution that creates the bundle, indicating the location to which returns, final return notifications and preliminary return notifications shall be sent. This is usually the Bank of First Deposit. This field shall be applied to items within the bundle that do not have an associated Check Detail Addendum A Record (Type 26). Information in the Check Detail Addendum A Record (Type 26) supersedes information in this field.

Usage: Conditional
Shall be present only under clearing arrangements. It shall not be used when the Collection Type Indicator Defined Value is '03' Return, '05' Preliminary Return Notification, '06' Final Return Notification, '07' Administrative Return, '09' Delayed Processing Notification.
Position: 55 – 63
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

or

TTTTT-FFF, where:

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TTTTT	Transit Number
FFF	Canadian Financial Institution Number

9.11 Bundle Creation Time

The time the bundle is created. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	64 – 67	
Size:	4	
Type:	NB	Numeric/Blank Fill
Format:	hhmm, where:	
	hh	hour
	mm	minute
Defined Values:	hh	'00' through '23'
	mm	'00' through '59'

9.12 User Field

A field used at the discretion of users of the standard.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	68 – 73	
Size:	6	
Type:	ANS	Alphanumeric/Special

9.13 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage:	Mandatory	
Position:	74 – 80	
Size:	7	
Type:	AB	All Blank

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10 Check Detail Record (Type 25)

The Check Detail Record is conditional and contains fourteen fields. It shall be present in a bundle designated as forward presentment with a Collection Type Indicator of '00', or '01', or '12'. One Check Detail Record shall be sent for each check. It shall always follow one of these records: a Bundle Header Record (Type 20), or another Check Detail Record, or Check Detail Addendum A Record (Type 26), or Check Detail Addendum B Record (Type 27), or Check Detail Addendum C Record (Type 28), or Image View Data Record (Type 52), or Image View Analysis Record (Type 54), or Image Test Detail Record (Type 56), or Credit/Reconciliation Record (Type 61), or Digital Certificate Record (Type 64) or User Record (Type 68) Format Type 002. The data in Fields 2 through 6 represent the check MICR line (See ANS X9.100-160-1 for MICR data placement). The data in the record is created by the ECE Institution, which may or may not be the Bank of First Deposit.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Auxiliary On-Us	C	03 – 17	15	NBMcd
3	External Processing Code	C	18 – 18	1	NBMc
4	Payor Bank Routing Number	M	19 – 27	9	NBMcd
5	On-Us	C	28 – 47	20	NBMcdo
6	Item Amount	M	48 – 57	10	N
7	ECE Institution Item Sequence Number	M	58 – 72	15	NB
8	Documentation Type Indicator	C	73 – 73	1	AN
9	Electronic Return Acceptance Indicator	C	74 – 74	1	AN
10	MICR Valid Indicator	C	75 – 75	1	NB
11	BOFD Indicator	C	76 – 76	1	A
12	Check Detail Record Addendum Count	M	77 – 78	2	N
13	Correction Indicator	C	79 – 79	1	AN
14	Archive Type Indicator	C	80 – 80	1	AN

Note: All fixed length conditional fields that are not used shall be filled with blanks.

10.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '25' Check Detail Record

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10.2 Auxiliary On-Us

A number used on commercial checks at the discretion of the payor bank. The handling of dashes and spaces shall be determined between the exchange partners. If the Auxiliary On-Us field exceeds 15 data characters, this field shall contain the 15 right-most digits on the check.

Usage: Conditional
Shall be present if on the MICR line of the original check.
Position: 03 – 17
Size: 15
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash

10.3 External Processing Code

A code used for special purposes as authorized by the Accredited Standards Committee X9, also known as position 44. See X9.100-160-2 for code usage.

Usage: Conditional
Shall be present if on the MICR line of the original check or IRD.
Position: 18 – 18
Size: 1
Type: NBMc Numeric/Blank/MICR Can't Read

10.4 Payor Bank Routing Number

A number used to identify the institution by or through which the item is payable.

Usage: Mandatory
Position: 19 – 27
Size: 9
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash
Format: TTTTAAAAC where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

or

TTTTT-FFF where:

TTTTT	Transit Number
FFF	Canadian Financial Institution Number

or

TTTT-AAAA where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier

or

bTTTTAAAA where:

b	blank
TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier

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10.5 On-Us

On-Us field from the MICR line of the check. On-Us data usually consists of the payor's account number, a serial number, or transaction code, or both. See Annex A for formatting of this field. The handling of dashes and spaces shall be determined between the exchange partners.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 28 – 47
Size: 20
Type: NBMcdo Numeric/Blank/MICR Can't Read, Dash and On-Us

10.6 Item Amount

The dollar value of the check. Default is U.S. dollars unless otherwise agreed within the exchange.

Usage: Mandatory
Position: 48 – 57
Size: 10
Type: N Numeric

10.7 ECE Institution Item Sequence Number

A number assigned by the institution that creates the Check Detail Record.

Usage: Mandatory
Position: 58 – 72
Size: 15
Type: NB Numeric/Blank Fill

10.8 Documentation Type Indicator

A code used to indicate the type of documentation that supports the check record. This field is superseded by the Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) for all Defined Values except 'Z' Not Same Type. In the case of Defined Value of 'Z', the Documentation Type Indicator in this record takes precedent.

Usage: Conditional
Shall be present when Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) is Defined Value of 'Z'.
Position: 73 –73
Size: 1
Type: AN Alphanumeric
Defined Values:
'A' No image provided, paper provided separately
'B' No image provided, paper provided separately, image upon request
'C' Image provided separately, no paper provided
'D' Image provided separately, no paper provided, image upon request
'E' Image and paper provided separately
'F' Image and paper provided separately, image upon request
'G' Image included, no paper provided
'H' Image included, no paper provided, image upon request
'I' Image included, paper provided separately
'J' Image included, paper provided separately, image upon request

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	‘K’	No image provided, no paper provided
	‘L’	No image provided, no paper provided, image upon request
	‘M’	No image provided, Electronic Check provided separately

10.9 Electronic Return Acceptance Indicator

A code that indicates whether the institution that creates the Check Detail Record will or will not support electronic return processing.

Usage:	Conditional Shall be present when Collection Type Indicator (Field 2) in the Bundle Header Record (Type 20) equals ‘01’; otherwise it shall not be used.	
Position:	74 – 74	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	Will not accept any electronic information
	‘1’	Will accept electronic preliminary return notifications, electronic returns, and electronic final return notifications
	‘2’	Will accept electronic preliminary return notifications and electronic returns
	‘3’	Will accept electronic preliminary return notifications and electronic final return notifications
	‘4’	Will accept electronic returns and electronic final return notifications
	‘5’	Will accept electronic preliminary return notifications only
	‘6’	Will accept electronic returns only
	‘7’	Will accept electronic final return notifications only
	‘8’	Will accept electronic preliminary return notifications, electronic returns, electronic final return notifications, and electronic image returns
	‘9’	Will accept electronic preliminary return notifications, electronic returns and electronic image returns
	‘A’	Will accept electronic preliminary return notifications, electronic final return notifications and electronic image returns
	‘B’	Will accept electronic returns, electronic final return notifications and electronic image returns
	‘C’	Will accept electronic preliminary return notifications and electronic image returns
	‘D’	Will accept electronic returns and electronic image returns
	‘E’	Will accept electronic final return notifications and electronic image returns
	‘F’	Will accept electronic image returns only

10.10 MICR Valid Indicator

A code that indicates the relationship of a missing on-us field and/or the presence of an unreadable character in the MICR line. See Annex I for more information.

Usage:	Conditional Shall be present only under clearing arrangements.	
Position:	75 – 75	
Size:	1	
Type:	NB	Numeric/Blank Fill
Defined Values:	‘1’	Good read, On-Us field present
	‘2’	Good read and missing On-Us field
	‘3’	Read error encountered, On-Us field present
	‘4’	Missing On-Us field and read error encountered

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10.11 BOFD Indicator

A code that indicates whether the ECE institution indicated on the Bundle Header Record (Type 20) is the Bank of First Deposit (BOFD). This field shall be applied to items within the bundle that do not have an associated Check Detail Addendum A Record (Type 26).

Usage:	Conditional	
	Shall be present only if a Check Detail Addendum A Record (Type 26) is not present.	
Position:	76 – 76	
Size:	1	
Type:	A	Alphabetic
Defined Values:	‘Y’	ECE institution is BOFD
	‘N’	ECE institution is not BOFD
	‘U’	ECE institution relationship to BOFD is undetermined

10.12 Check Detail Record Addendum Count

The number of Check Detail Record Addendum Records to follow this Check Detail Record.

Usage:	Mandatory	
Position:	77 – 78	
Size:	2	
Type:	N	Numeric
Defined Values:	‘00’ through ‘99’	Number of addendum records to follow

10.13 Correction Indicator

An indicator to identify whether and how the MICR line was repaired, for fields other than Payor Bank Routing Number and Amount.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	79 - 79	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	No Repair
	‘1’	Repaired (method unknown)
	‘2’	Repaired without Operator intervention
	‘3’	Repaired with Operator intervention
	‘4’	Undetermined

10.14 Archive Type Indicator

A code used to indicate the type of archive that supports this Check Detail Record. Access method, availability and timeframes shall be defined by clearing arrangements.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	80 – 80	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘A’	Microfilm
	‘B’	Image

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‘C’ Paper
‘D’ Microfilm and image
‘E’ Microfilm and paper
‘F’ Image and paper
‘G’ Microfilm, image and paper
‘H’ Electronic Check Instrument
‘I’ None

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11 Check Detail Addendum A Record (Type 26)

The Check Detail Addendum A Record is conditional and contains fourteen fields. It shall be present unless omitted under clearing arrangements. More than one Check Detail Addendum A Record is permitted for a Check Detail Record (Type 25) and it shall always follow its immediately preceding Check Detail Record (Type 25), or another Check Detail Addendum A Record or User Record (Type 68) Format Type 001. Multiple Check Detail Addendum A Records shall only be used when an item has been represented to identify the return location for each presentment. It is one of three addendum type records available for use with the Check Detail Record (Type 25). Data in the Check Detail Addendum A Records are transferred to Return Addendum A Records (Type 32) when the item is returned. This record shall contain the same information from the Return Addendum A Record (Type 32) from the return file if the items are to be represented electronically. See Annex L for more information on endorsements. If this record is being used to indicate a return location other than the BOFD, then only Fields 1 – 3 and 13 of this record are applicable; other fields are blank.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Check Detail Addendum A Record Number	M	03 – 03	1	N
3	Return Location Routing Number	C	04 – 12	9	NBD
4	BOFD Business Endorsement Date	C	13 – 20	8	NB
5	BOFD Item Sequence Number	C	21 – 35	15	NB
6	Deposit Account Number at BOFD	C	36 – 53	18	ANS
7	BOFD Deposit Branch	C	54 – 58	5	ANS
8	Payee Name	C	59 – 108	50	ANS
9	Truncation Indicator	C	109 – 109	1	A
10	BOFD Conversion Indicator	C	110 – 110	1	AN
11	BOFD Correction Indicator	C	111 – 111	1	AN
12	BOFD Magnetic Read Indicator	C	112 – 112	1	AN
13	User Field	C	113 – 113	1	ANS
14	Reserved	M	114 – 115	2	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

11.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '26' Check Detail Addendum A Record

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11.2 Check Detail Addendum A Record Number

This field shall contain the number representing the chronological order (oldest to newest) in which each Check Detail Addendum A Record (Type 26), associated with the immediately preceding Check Detail Record (Type 25) was created. The order shall represent the endorsement order with '1' being the oldest endorsement. Check Detail Addendum A Records shall be in sequential order starting with '1'.

Usage: Mandatory
Position: 03 – 03
Size: 1
Type: N Numeric

11.3 Return Location Routing Number

A Routing Number specified by the ECE Institution, indicating the location to which returns, final return notifications and preliminary return notifications shall be sent. This is usually the Bank of First Deposit. This field shall be applied to this item and takes precedent over any value present in the Return Location Routing Number (Field 10) in the Bundle Header Record (Type 20).

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 04 – 12
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

or

TTTTT-FFF, where:

TTTTT	Transit Number
FFF	Canadian Financial Institution Number

11.4 BOFD Business Endorsement Date

The year, month and day in the endorsement that designates the business date at the Bank of First Deposit.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements. Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 13 – 20
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:

YYYY	year
MM	month
DD	day

Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

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11.5 BOFD Item Sequence Number

A number used to identify the item at the Bank of First Deposit.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements. Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 21 – 35
Size: 15
Type: NB Numeric/Blank

11.6 Deposit Account Number at BOFD

A number used to identify the depository account at the Bank of First Deposit. This field shall be used when this record is identifying the BOFD.

Usage: Conditional
Shall be used only if this record is identifying BOFD information.
Shall be present if available when Collection Type Indicator (Field 2) in Cash Letter Header Record (Type 10) has Defined Values of '05' or '06'. Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 36 – 53
Size: 18
Type: ANS Alphanumeric/Special

11.7 BOFD Deposit Branch

A code used to identify the branch at the Bank of First Deposit.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 54 – 58
Size: 5
Type: ANS Alphanumeric/Special

11.8 Payee Name

The name of the payee from the check.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 59 – 108
Size: 50
Type: ANS Alphanumeric/Special

11.9 Truncation Indicator

An indicator used to identify if this BOFD is the truncator of the original check.

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Usage: Conditional
Shall be present if the routing number in Return Location Routing Number of this record reflects the BOFD. It shall be present for original checks that have been truncated. This indicator shall not be used for substitute checks that have been truncated or reconverted.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 109 – 109
Size: 1
Type: A Alphabetic
Defined Values: 'Y' Yes this institution truncated the original check
'N' No this institution did not truncate the original check

11.10 BOFD Conversion Indicator

A code used to indicate the conversion between the physical document, an image, or a subsequent IRD. The indicator is specific to the action of this BOFD endorser.

Usage: Conditional
Shall be present only under clearing arrangements.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 110 – 110
Size: 1
Type: AN Alphanumeric
Defined Values:
'0' Did not convert physical document
'1' Original check converted to IRD (not valid for electronic exchange)
'2' Original check converted to image
'3' IRD converted to another IRD (not valid for electronic exchange)
'4' IRD converted to image of IRD
'5' Image converted to an IRD (not valid for electronic exchange)
'6' Image converted to another image (e.g., transcoded)
'7' Did not convert image (e.g., same as received from source)
'8' Undetermined

11.11 BOFD Correction Indicator

An indicator to identify whether and how the MICR line was repaired by the BOFD, for fields other than Payor Bank Routing Number and Amount.

Usage: Conditional
Shall be present only under clearing arrangements.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 111 – 111
Size: 1
Type: AN Alphanumeric
Defined Values:
'0' No Repair
'1' Repaired (method unknown)
'2' Repaired without Operator intervention
'3' Repaired with Operator intervention
'4' Undetermined

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11.12 BOFD Magnetic Read Indicator

An indicator to identify the type of technology used by the BOFD to read the MICR codeline on the physical check, and to identify potential fraud suspects when the MICR characters are read using a true magnetic MICR reader.

Usage: Conditional
Shall be present only under clearing arrangements.
Shall not be present if this record (Type 26) is being used to indicate a return location other than the BOFD.
Position: 112 – 112
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ MICR code line was read with magnetic MICR read technology and MICR characters were present
‘1’ MICR code line was not read with magnetic MICR read technology
‘2’ MICR code line was read with magnetic MICR read technology and no magnetic characters were read
‘3’ Unknown

11.13 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 113 – 113
Size: 1
Type: ANS Alphanumeric/Special

11.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 114 – 115
Size: 2
Type: AB All Blank

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12 Check Detail Addendum B Record (Type 27)

The Check Detail Addendum B Record is conditional and contains eighteen fields. It shall be present only under clearing arrangements. It shall always follow its immediately preceding Check Detail Record (Type 25) or Check Detail Addendum A Record (Type 26) or User Record (Type 68) Format Type 001, if present. Only one Check Detail Addendum B Record is permitted for a Check Detail Record (Type 25). It is one of three addendum type records available for use with the Check Detail Record (Type 25).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Item Description	C	03 – 22	20	ANS
3	Image Capture Date	C	23 – 30	8	NB
4	Image Capture Time	C	31 – 36	6	NB
5	Microfilm Archive Sequence Number	C	37 – 51	15	NB
6	Length of Image Archive Locator	M	52 – 55	4	N
7	Length of Captured Unparsed MICR Data	M	56 – 57	2	N
8	Length of Captured High Unparsed MICR Data	M	58 – 59	2	N
9	Length of Corrected Unparsed MICR Data	M	60 – 61	2	N
10	Length of Corrected High Unparsed MICR Data	M	62 – 63	2	N
11	Length of User Data	M	64 – 68	5	N
12	Reserved	M	69 – 73	5	AB
13	Image Archive Locator	C	74 – (73+U)	Variable (U)	ANS
14	Captured Unparsed MICR Data	C	(74+U) – (73+U+V)	Variable (V)	NBMU
15	Captured High Unparsed MICR Data	C	(74+U+V) – (73+U+V+W)	Variable (W)	NBMU
16	Corrected Unparsed MICR Data	C	(74+U+V+W) – (73+U+V+W+X)	Variable (X)	NBMU
17	Corrected High Unparsed MICR Data	C	(74+U+V+W+X) – (73+U+V+W+X+Y)	Variable (Y)	NBMU
18	User Field	C	(74+U+V+W+X+Y) – (73+U+V+W+X+Y+Z)	Variable (Z)	ANS

Notes: Fixed length fields that are conditional and are not used shall be filled with Blanks. Variable length fields that are not used (i.e., Size = '0') are omitted.

12.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2

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Type: N Numeric
Defined Values: '27' Check Detail Addendum B Record

12.2 Item Description

A field used to describe additional information about the transaction.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 03 – 22
Size: 20
Type: ANS Alphanumeric/Special

12.3 Image Capture Date

The year, month and day the image is captured. The default shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 23 – 30
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

12.4 Image Capture Time

The time the image is captured. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 31 – 36
Size: 6
Type: NB Numeric/Blank Fill
Format: hhmmss, where:
hh hour
mm minute
ss second
Defined Values: hh '00' through '23'
mm '00' through '59'
ss '00' through '59'

12.5 Microfilm Archive Sequence Number

A number that identifies the item in the microfilm archive system; it may be different than the ECE Institution Item Sequence Number (Field 7) in the Check Detail Record (Type 25) and the Image Archive Locator in this record.

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Usage: Conditional
Shall be present only under clearing arrangements.
Position: 37 – 51
Size: 15
Type: NB Numeric/Blank Fill

12.6 Length of Image Archive Locator

The number of bytes contained in the Image Archive Locator field (Field 13) in this Check Detail Addendum B Record.

Usage: Mandatory
Position: 52 – 55
Size: 4
Type: N Numeric
Defined Values: '0000' Image Archive Locator field is not present
'0001' through '9999' (valid when Image Archive Locator field is present)

12.7 Length of Captured Unparsed MICR Data

The number of bytes contained in the Captured Unparsed MICR Data field (Field 14) in this Check Detail Addendum B Record.

Usage: Mandatory
Position: 56 – 57
Size: 2
Type: N Numeric
Defined Values: '00' Captured Unparsed MICR Data field is not present
'01' through '99' (valid when Captured Unparsed MICR Data field is present)

12.8 Length of Captured High Unparsed MICR Data

The number of bytes contained in the Captured High Unparsed MICR Data field (Field 15) in this Check Detail Addendum B Record when more than one MICR line is present on the check.

Usage: Mandatory
Position: 58 – 59
Size: 2
Type: N Numeric
Defined Values: '00' Captured High Unparsed MICR Data field is not present
'01' through '99' (valid when Captured High Unparsed MICR Data field is present)

12.9 Length of Corrected Unparsed MICR Data

The number of bytes contained in the Corrected Unparsed MICR Data field (Field 16) in this Check Detail Addendum B Record.

Usage: Mandatory
Position: 60 – 61
Size: 2
Type: N Numeric
Defined Values: '00' Corrected Unparsed MICR Data is not present
'01' through '99' (valid when Corrected Unparsed MICR Data field is present)

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12.10 Length of Corrected High Unparsed MICR Data

The number of bytes contained in the Corrected High Unparsed MICR Data field (Field 17) in this Check Detail Addendum B Record when more than one MICR line is present on the check.

Usage: Mandatory
Position: 62 – 63
Size: 2
Type: N Numeric
Defined Values: '00' Corrected High Unparsed MICR Data is not present
'01' through '99' (valid when Corrected High Unparsed MICR Data field is present)

12.11 Length of User Data

The number of bytes contained in the User Data field (Field 18) in this Check Detail Addendum B Record.

Usage: Mandatory
Position: 64 – 68
Size: 5
Type: N Numeric
Defined Values: '00000' User Data field is not present
'00001' through '99999' (valid when User Data field is present)

12.12 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 69 – 73
Size: 5
Type: AB All Blank

12.13 Image Archive Locator

A reference used to find the item in the image archive system (for example, may be a URL). See Annex K for more information.

Usage: Conditional
Shall be present if Length of Image Archive Locator (Field 6) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Image Archive Locator (Field 6) of this record.
Type: ANS Alphanumeric/Special

12.14 Captured Unparsed MICR Data

The complete unparsed MICR data as captured from the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and unreadable characters shall appear as an asterisk ("*"). See Clause 5.2 for translations.

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Usage: Conditional
Shall be present if Length of Captured Unparsed MICR Data (Field 7) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Captured Unparsed MICR Data (Field 7) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

12.15 Captured High Unparsed MICR Data

The complete unparsed MICR data as captured high from the check when more than one MICR line is present on the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and unreadable characters shall appear as the asterisk ("*"). See Clause 5.2 for translations.

Usage: Conditional
Shall be present if Length of Captured High Unparsed MICR Data (Field 8) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Captured High Unparsed MICR Data (Field 8) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

12.16 Corrected Unparsed MICR Data

The complete unparsed MICR data after repair. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and an unreadable character that has not been corrected shall appear as the asterisk ("*"). See Clause 5.2 for translations.

Usage: Conditional
Shall be present if Length of Corrected Unparsed MICR Data (Field 9) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Corrected Unparsed MICR Data (Field 9) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

12.17 Corrected High Unparsed MICR Data

The complete unparsed MICR data after repair from reading high when more than one MICR line is present on the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as space(" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"),and the R/T symbol shall appear as a number sign ("#") and an unreadable character that has not been corrected shall appear as the asterisk ("*"). See Clause 5.2 for translations.

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Usage: Conditional
Shall be present if Length of Corrected High Unparsed MICR Data (Field 10) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Field 10 (Length of Corrected Unparsed MICR Data) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

12.18 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present if Length of User Data (Field 11) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of User Data (Field 11) of this record
Type: ANS Alphanumeric/Special

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13 Check Detail Addendum C Record (Type 28)

The Check Detail Addendum C Record is conditional and contains fourteen fields. It shall be present unless omitted under clearing arrangements. This record follows its immediately preceding Check Detail Record (Type 25), or follows a Check Detail Addendum A Record (Type 26), or a Check Detail Addendum B Record (Type 27), or User Record (Type 68) Format Type 001, or Check Detail Addendum C Record if present. It is one of three addendum type records available for use with the Check Detail Record (Type 25). Multiple Check Detail Addendum C Records are permitted for a Check Detail Record (Type 25). Data in the Check Detail Addendum C Records are transferred to Return Addendum D Records (Type 35) when the item is returned. This record is used for all previous forward or return electronic endorsements, except electronic BOFD endorsements that are carried on the Check Detail Addendum A Record (Type 26). If the depositary bank (BOFD) is the return location and identified in the Check Detail Addendum A Record (Type 26), then this record shall not be used for that institution's endorsement. If the return location identified in the Check Detail Addendum A Record (Type 26) is different than the depositary bank (BOFD) and the identification of the BOFD is desired, then this record shall be used for the BOFD institution's endorsement. If the Check Detail Addendum A Record (Type 26) is used to identify the Return Location rather than the BOFD, the BOFD Deposit Branch and Payee Name fields cannot be used. The other BOFD endorsing data can be applied to this endorsing bank record (Check Detail Addendum C Record (Type 28)). This record shall contain the same information from the Return Addendum D Record (Type 35) from the return file if the items are to be represented electronically. See Annex L for more information on endorsements.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Check Detail Addendum C Record Number	M	03 – 04	2	N
3	Endorsing Bank Routing Number	C	05 – 13	9	NBD
4	Endorsing Bank Endorsement Date	C	14 – 21	8	NB
5	Endorsing Bank Item Sequence Number	C	22 – 36	15	NB
6	Truncation Indicator	C	37 – 37	1	A
7	Endorsing Bank Conversion Indicator	C	38 – 38	1	AN
8	Endorsing Bank Correction Indicator	C	39 – 39	1	AN
9	Return Reason	C	40 – 41	2	AN
10	Endorsing Bank Magnetic Read Indicator	C	42 – 42	1	AN
11	Endorsing Bank Identifier	C	43 – 43	1	AN
12	Deposit Account Number at BOFD	C	44 – 61	18	ANS
13	User Field	C	62 – 76	15	ANS
14	Reserved	M	77 – 80	4	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

13.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02

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Size: 2
Type: N Numeric
Defined Values: '28' Check Detail Addendum C Record

13.2 Check Detail Addendum C Record Number

This field shall contain the number representing the chronological order (oldest to newest) in which each Check Detail Addendum C Record (Type 28), associated with the immediately preceding Check Detail Record (Type 25) was created. The order shall represent the endorsement order with '01' being the oldest endorsement. Check Detail Addendum C Records shall be in sequential order starting with '01'.

Usage: Mandatory
Position: 03 – 04
Size: 2
Type: N Numeric

13.3 Endorsing Bank Routing Number

A number used to identify the bank that endorsed the check.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 05 – 13
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number

13.4 Endorsing Bank Endorsement Date

The year, month and day in the endorsement that designates the business date at the endorsing bank.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 14 – 21
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

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13.5 Endorsing Bank Item Sequence Number

A number used to identify the item at the endorsing bank.

Usage:	Conditional	
	Shall be present if available, unless omitted under clearing arrangements.	
Position:	22 – 36	
Size:	15	
Type:	NB	Numeric/Blank Fill

13.6 Truncation Indicator

An indicator used to identify if this endorsing institution is the truncator of the original check.

Usage:	Conditional	
	It shall be present for original checks that have been truncated. This indicator shall not be used for substitute checks that have been truncated or reconverted.	
Position:	37 – 37	
Size:	1	
Type:	A	Alphabetic
Defined Values:	'Y'	Yes this institution truncated the original check
	'N'	No this institution did not truncate the original check

13.7 Endorsing Bank Conversion Indicator

A code used to indicate the conversion between the physical document, an image, or a subsequent IRD. The indicator is specific to the action of this endorser.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	38 – 38	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Did not convert physical document
	'1'	Original check converted to IRD (not valid for electronic exchange)
	'2'	Original check converted to image
	'3'	IRD converted to another IRD (not valid for electronic exchange)
	'4'	IRD converted to image of IRD
	'5'	Image converted to an IRD (not valid for electronic exchange)
	'6'	Image converted to another image (e.g., transcoded)
	'7'	Did not convert image (e.g., same as received from source)
	'8'	Undetermined

13.8 Endorsing Bank Correction Indicator

An indicator to identify whether and how the MICR line was repaired by the endorsing bank, for fields other than Payor Bank Routing Number and Amount.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	39 – 39	
Size:	1	
Type:	AN	Alphanumeric

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Defined Values: '0' No Repair
'1' Repaired (method unknown)
'2' Repaired without Operator intervention
'3' Repaired with Operator intervention
'4' Undetermined

13.9 Return Reason

A code used to indicate the reason for non-payment on a represented item. This is the reason for return under applicable law or exchange agreements. This code can be obtained from the Return Reason included in the Return Addendum B Record (Type 33) or from the Return Addendum D Record (Type 35).

Usage: Conditional
Shall be present only when a return is being represented electronically.
Position: 40 – 41
Size: 2
Type: AN Alphanumeric
Defined Values: See Annex G for allowable values

13.10 Endorsing Bank Magnetic Read Indicator

An indicator to identify the type of technology used by the endorsing bank to read the MICR codeline on the physical check, and to identify potential fraud suspects when the MICR characters are read using a true magnetic MICR reader. The indicator is specific to the action of this endorser.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 42 – 42
Size: 1
Type: AN Alphanumeric
Defined Values: '0' MICR code line was read with magnetic MICR read technology and MICR characters were present
'1' MICR code line was not read with magnetic MICR read technology
'2' MICR code line was read with magnetic MICR read technology and no magnetic characters were read
'3' Unknown

13.11 Endorsing Bank Identifier

A code used to identify the bank's role in the collection process.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 43 – 43
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Depositary Bank (BOFD)
'1' Other Collecting Bank
'2' Other Returning Bank
'3' Payor Bank

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13.12 Deposit Account Number at BOFD

A number used to identify the depository account at the Bank of First Deposit. This field shall be used when the Return Addendum B Record (Type 26) is used for a return location that is not the actual BOFD and this Return Addendum C Record is used to identify the BOFD.

Usage: Conditional
Shall be used only if this record is identifying BOFD information.
Shall be present if available when Collection Type Indicator (Field 2) in Cash Letter Header Record (Type 10) has Defined Values of '05' or '06'.
Position: 44 – 61
Size: 18
Type: ANS Alphanumeric/Special

13.13 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 62 – 76
Size: 15
Type: ANS Alphanumeric/Special

13.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 77 – 80
Size: 4
Type: AB All Blank

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14 Return Record (Type 31)

The Return Record is conditional and contains nine fields. It shall be present as indicated in the Bundle Header Record (Type 20) with a Collection Type Indicator (Field 2) set to Defined Values of '03' Return, or '05' Preliminary Return Notification, or '06' Final Return Notification, or '07' Administrative Return, or '09' Delayed Processing Notification. It shall always follow one of these records: Bundle Header Record (Type 20), or Return Addendum B Record (Type 33), or Return Addendum C Record (Type 34), or Return Addendum D Record (Type 35), or Image View Data Record (Type 52), or Image View Analysis Record (Type 54), or Image Test Detail Record (Type 56), or Credit/Reconciliation Record (Type 61), or Digital Certificate Record (Type 64), or User Record (Type 68) Format Type 002. One pair of return records consisting of this record and Return Addendum B Record (Type 33) shall be sent for each electronic return or electronic return notification. The record is created by either the payor bank or the returning ECE institution.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Auxiliary On-Us	C	03 – 17	15	NBMcd
3	External Processing Code	C	18 – 18	1	NBMc
4	Payor Bank Routing Number	M	19 – 27	9	NBMcd
5	On-Us	C	28 – 47	20	NBMcdo
6	Item Amount	M	48 – 57	10	N
7	ECE Institution Item Sequence Number	M	58 – 72	15	NB
8	Return Record Addendum Count	M	73 – 74	2	N
9	Reserved	M	75 – 80	6	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

14.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '31' Return Record

14.2 Auxiliary On-Us

A number used on commercial checks at the discretion of the payor bank. The handling of dashes and spaces shall be determined between the exchange partners. If Auxiliary On-Us Field (Field 2) in the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unchanged. If the Auxiliary On-Us field exceeds 15 data characters, this field shall contain the 15 right-most digits on the check.

Usage: Conditional
Shall be present if on the MICR line of the original check.
Position: 03 – 17

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Size: 15
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash

14.3 External Processing Code

A code used for special purposes as authorized by the Accredited Standards Committee X9, also known as position 44. If External Processing Code (Field 3) of the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unless corrected by the paying bank.

Usage: Conditional
Shall be present if on the MICR line of the original check or IRD.
Position: 18 – 18
Size: 1
Type: NBMc Numeric/Blank/MICR Can't Read

14.4 Payor Bank Routing Number

A number used to identify the institution by or through which the item is payable. If Payor Bank Routing Number (Field 4) of the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unchanged.

Usage: Mandatory
Position: 19 – 27
Size: 9
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash
Format: TTTTAAAAC where:
- TTTT Federal Reserve Prefix
- AAAA ABA Institution Identifier
- C Check Digit

or

TTTTT-FFF where:
- TTTTT Transit Number
- FFF Canadian Financial Institution Number

or

TTTT-AAAA where:
- TTTT Federal Reserve Prefix
- AAAA ABA Institution Identifier

or

bTTTTAAAA where:
- b blank
- TTTT Federal Reserve Prefix
- AAAA ABA Institution Identifier

14.5 On-Us

On-Us field from the MICR line of the check. On-Us data usually consists of the payor's account number, a serial number, or transaction code, or both. See Annex A for formatting of this field. The handling of dashes and spaces shall be determined between the exchange partners. If On-Us Field (Field 5) of the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unchanged.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 28 – 47

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Size: 20
Type: NBMcdo Numeric/Blank/MICR Can't Read, Dash and On-Us

14.6 Item Amount

The dollar value of the check. Default is U.S. dollars unless otherwise agreed within the exchange. If Item Amount (Field 6) of the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unchanged.

Usage: Mandatory
Position: 48 – 57
Size: 10
Type: N Numeric

14.7 ECE Institution Item Sequence Number

A number assigned by the institution that creates the Check Detail Record (Type 25). If ECE Institution Item Sequence Number (Field 7) of the Check Detail Record (Type 25) was received electronically, that data shall be transferred to this field unchanged.

Usage: Mandatory
Position: 58 – 72
Size: 15
Type: NB Numeric/Blank Fill

14.8 Return Record Addendum Count

The number of Return Record Addendum Records to follow this Return Record.

Usage: Mandatory
Position: 73 – 74
Size: 2
Type: N Numeric
Defined Values: '00' through '99'

14.9 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 75 – 80
Size: 6
Type: AB All Blank

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15 Return Addendum A Record (Type 32)

The Return Addendum A Record is conditional and contains fourteen fields. It shall be present unless omitted under clearing arrangements. If the original item is truncated and the creating institution is the BOFD, this record shall be present. More than one Return Addendum A Record is permitted for a pair of Return Record (Type 31) and Return Addendum B Record (Type 33), and it shall always follow its immediately preceding Return Record (Type 31), or another Return Addendum A Record. Multiple Return Addendum A Records shall only be used when an item has been represented to identify the return location for each presentment. It is one of four addendum type records available for use with the Return Record (Type 31). This record shall contain the same information from the Check Detail Addendum A Record (Type 26) from the forward presentment, if the item was presented electronically and contained the actual BOFD information.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Return Addendum A Record Number	M	03 – 03	1	N
3	Return Location Routing Number	C	04 – 12	9	NBD
4	BOFD Business Endorsement Date	C	13 – 20	8	NBQ
5	BOFD Item Sequence Number	C	21 – 35	15	NBQ
6	Deposit Account Number at BOFD	C	36 – 53	18	ANS
7	BOFD Deposit Branch	C	54 – 58	5	ANS
8	Payee Name	C	59 – 108	50	ANS
9	Truncation Indicator	C	109 – 109	1	A
10	BOFD Conversion Indicator	C	110 – 110	1	AN
11	BOFD Correction Indicator	C	111 – 111	1	AN
12	BOFD Magnetic Read Indicator	C	112 – 112	1	AN
13	User Field	C	113 – 113	1	ANS
14	Reserved	M	114 – 115	2	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

15.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '32' Return Addendum A Record

15.2 Return Addendum A Record Number

This field shall contain the number representing the chronological order (oldest to newest) in which each Return Addendum A Record (Type 32), associated with the immediately preceding Return Record (Type 31) and Return

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Addendum B Record (Type 33), was created. The order shall represent the endorsement order with '1' being the oldest endorsement. The Return Addendum A Records shall be in sequential order starting with '1'.

Usage: Mandatory
Position: 03 - 03
Size: 1
Type: N Numeric

15.3 Return Location Routing Number

A Routing Number specified by the ECE Institution, indicating the location to which returns, final return notifications and preliminary return notifications shall be sent. This is usually the Bank of First Deposit. If Return Location Routing Number (Field 3) in the Check Detail Addendum A Record (Type 26) was received electronically, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 04 –12
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number

15.4 BOFD Business Endorsement Date

The year, month and day in the endorsement that designates the business date at the Bank of First Deposit. The presence of one or more question marks ("?") in this field indicates questionable data. If BOFD Business Endorsement Date (Field 4) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 13 – 20
Size: 8
Type: NBQ Numeric/Blank Fill/Questionable Data
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

15.5 BOFD Item Sequence Number

A number used to identify the item at the Bank of First Deposit. The presence of one or more question marks ("?") in this field indicates questionable data. If BOFD Item Sequence Number (Field 5) in the Check Detail

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Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 21 – 35
Size: 15
Type: NBQ Numeric/Blank Fill/Questionable Data

15.6 Deposit Account Number at BOFD

A number used to identify the depository account at the Bank of First Deposit. The presence of one or more question marks ("?") in this field indicates questionable data. If Deposit Account Number at BOFD (Field 6) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 36 – 53
Size: 18
Type: ANS Alphanumeric/Special

15.7 BOFD Deposit Branch

A code used to identify the branch at the Bank of First Deposit. The presence of one or more question marks ("?") in this field indicates questionable data. If BOFD Deposit Branch (Field 7) in the Check Detail Addendum A Record (Type 26) was received electronically, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 54 – 58
Size: 5
Type: ANS Alphanumeric/Special

15.8 Payee Name

The name of payee from the check. The presence of one or more question marks ("?") in this field indicates questionable data. If Payee Name (Field 8) in the Check Detail Addendum A Record (Type 26) was received electronically, that data shall be transferred to this field.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 59 – 108
Length: 50
Type: ANS Alphanumeric/Special

15.9 Truncation Indicator

An indicator used to identify if the BOFD is the truncator of the original check. If Truncation Indicator (Field 9) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

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Usage: Conditional
Shall be present if the routing number in Return Location Routing Number reflects the BOFD. It shall be present for original checks that have been truncated. This indicator shall not be used for substitute checks that have been truncated or reconverted.
Position: 109 – 109
Size: 1
Type: A Alphabetic
Defined Values:
‘Y’ Yes this institution truncated the original check
‘N’ No this institution did not truncate the original check

15.10 BOFD Conversion Indicator

A code used to indicate the conversion between the physical document, an image, or a subsequent IRD. The indicator is specific to the action of the BOFD endorser. If BOFD Conversion Indicator (Field 10) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 110 – 110
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ Did not convert physical document
‘1’ Original check converted to IRD (not valid for electronic exchange)
‘2’ Original check converted to image
‘3’ IRD converted to another IRD (not valid for electronic exchange)
‘4’ IRD converted to image of IRD
‘5’ Image converted to an IRD (not valid for electronic exchange)
‘6’ Image converted to another image (e.g., transcoded)
‘7’ Did not convert image (e.g., same as received from source)
‘8’ Undetermined

15.11 BOFD Correction Indicator

An indicator to identify whether and how the MICR line was repaired by the BOFD, for fields other than Payor Bank Routing Number and Amount. If BOFD Correction Indictor (Field 11) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 111 – 111
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ No Repair
‘1’ Repaired (method unknown)
‘2’ Repaired without Operator intervention
‘3’ Repaired with Operator intervention
‘4’ Undetermined

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15.12 BOFD Magnetic Read Indicator

An indicator to identify the type of technology used by the BOFD to read the MICR codeline on the physical check, and to identify potential fraud suspects when the MICR characters are read using a true magnetic MICR reader. If BOFD Magnetic Read Indicator (Field 12) in the Check Detail Addendum A Record (Type 26) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

Usage:	Conditional Shall be present only under clearing arrangements.	
Position:	112 – 112	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	MICR code line was read with magnetic MICR read technology and MICR characters were present
	'1'	MICR code line was not read with magnetic MICR read technology
	'2'	MICR code line was read with magnetic MICR read technology and no magnetic characters were read
	'3'	Unknown

15.13 User Field

A field used at the discretion of users of the standard.

Usage:	Conditional Shall be present only under clearing arrangements.	
Position:	113 – 113	
Size:	1	
Type:	ANS	Alphanumeric/Special

15.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage:	Mandatory	
Position:	114 – 115	
Size:	2	
Type:	AB	All Blank

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16 Return Addendum B Record (Type 33)

The Return Addendum B Record is conditional and contains eleven fields. It shall be present if a Return Record (Type 31) is present. The Return Addendum B Record is one of two records (Type 31 and Type 33) that shall be used together to convey return information. If a Return Record (Type 31) is present, then a Return Addendum B Record shall be present. Only one Return Addendum B Record is permitted for a Return Record (Type 31) and it shall always follow its immediately preceding Return Record (Type 31), or Return Addendum A Record (Type 32), if present. It is one of four addendum type records available for use with the Return Record (Type 31).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Return Reason	M	03 – 04	2	AN
3	Forward Bundle Date	C	05 – 12	8	NB
4	Additional Return Reason	C	13 – 14	2	AN
5	Number of Times Returned	C	15 – 15	1	NB
6	Return Documentation Type Indicator	C	16 – 16	1	AN
7	Archive Type Indicator	C	17 – 17	1	AN
8	Payor Bank Name	C	18 – 35	18	ANS
9	Payor Bank Item Sequence Number	C	36 – 50	15	NB
10	Payor Bank Business Date	C	51 – 58	8	NB
11	Payor Account Name	C	59 – 80	22	ANS

Note: All fixed length conditional fields that are not used shall be filled with blanks.

16.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '33' Return Addendum B Record

16.2 Return Reason

A code used to indicate the reason for non-payment. This is the reason for return under applicable law or exchange agreements.

Usage: Mandatory
Position: 03 – 04
Size: 2
Type: AN Alphanumeric
Defined Values: See Annex G for allowable values

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16.3 Forward Bundle Date

For electronic check exchange items, the year, month and day that designates the business date of the forward bundle. This data is transferred from the Bundle Business Date (Field 5) of the Bundle Header Record (Type 20). For items presented in paper cash letters, the year, month and day that the cash letter was created.

Usage:	Conditional Shall be present if available.
Position:	05 – 12
Size:	8
Type:	NB Numeric/Blank Fill
Format:	YYYYMMDD, where: YYYY year MM month DD day
Defined Values:	YYYY '1993' through '9999' MM '01' through '12' DD '01' through '31'

16.4 Additional Return Reason

A code used to indicate an additional reason for return. This is a return reason in addition to Return Reason (Field 2) to be used at the exchanging banks' discretion and is for informational purposes only. This return reason is not to be used in any other record.

Usage:	Conditional Shall be present only under clearing arrangements.
Position:	13 – 14
Size:	2
Type:	AN Alphanumeric
Defined Values:	See Annex G for allowable values

16.5 Number of Times Returned

A code used to indicate the number of times the paying bank has returned this item.

Usage:	Conditional Shall be present only under clearing arrangements.
Position:	15 – 15
Size:	1
Type:	NB Numeric/Blank Fill
Defined Values:	'0' Unknown '1' First return '2' Second return '3' Third return

16.6 Return Documentation Type Indicator

A code used to indicate the type of documentation that supports the return record. This field is superseded by the Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) for all Defined Values except 'Z' Not Same Type. In the case of Defined Value of 'Z', the Return Documentation Type Indicator in this record takes precedent.

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Usage: Conditional
Shall be present when Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) is Defined Value of 'Z'.
Position: 16 – 16
Size: 1
Type: AN Alphanumeric
Defined Values:
'A' No image provided, paper provided separately
'B' No image provided, paper provided separately, image upon request
'C' Image provided separately, no paper provided
'D' Image provided separately, no paper provided, image upon request
'E' Image and paper provided separately
'F' image and paper provided separately, image upon request
'G' Image included, no paper provided
'H' Image included, no paper provided, image upon request
'I' Image included, paper provided separately
'J' Image included, paper provided separately, image upon request
'K' No image provided, no paper provided
'L' No image provided, no paper provided, image upon request
'M' No image provided, Electronic Check provided separately

16.7 Archive Type Indicator

A code used to indicate the type of archive that supports the Return Record (Type 31). Access method, availability and timeframes shall be defined by clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 17 – 17
Size: 1
Type: AN Alphanumeric
Defined Values:
'A' Microfilm
'B' Image
'C' Paper
'D' Microfilm and image
'E' Microfilm and paper
'F' Image and paper
'G' Microfilm, image and paper
'H' Electronic Check Instrument
'I' None

16.8 Payor Bank Name

The short name of the institution by or through which the item is payable.

Usage: Conditional
Shall be present unless omitted under clearing arrangements
Position: 18 – 35
Size: 18
Type: ANS Alphanumeric/Special

16.9 Payor Bank Item Sequence Number

The number used to identify the item at the payor bank.

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Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 36 – 50
Size: 15
Type: NB Numeric/Blank Fill

16.10 Payor Bank Business Date

The year, month and day the payor bank processed the Return Record.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 51 – 58
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

16.11 Payor Account Name

The account name from payor bank records.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 59 – 80
Size: 22
Type: ANS Alphanumeric/Special

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17 Return Addendum C Record (Type 34)

The Return Addendum C Record is conditional and contains eighteen fields. It shall be present only under clearing arrangements. It shall always follow its immediately preceding Return Addendum B Record (Type 33) or User Record (Type 68) Format Type 001. Only one Return Addendum C Record is permitted for a pair of Return Record (Type 31) and Return Addendum B Record (Type 33). It is one of four addendum type records available for use with the Return Record (Type 31). This record when used shall contain the same information as Check Detail Addendum B Record (Type 27) from the forward presentment, if the item was presented electronically.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Item Description	C	03 – 22	20	ANS
3	Image Capture Date	C	23 – 30	8	NB
4	Image Capture Time	C	31 – 36	6	NB
5	Microfilm Archive Sequence Number	C	37 – 51	15	NB
6	Length of Image Archive Locator	M	52 – 55	4	N
7	Length of Captured Unparsed MICR Data	M	56 – 57	2	N
8	Length of Captured High Unparsed MICR Data	M	58 – 59	2	N
9	Length of Corrected Unparsed MICR Data	M	60 – 61	2	N
10	Length of Corrected High Unparsed MICR Data	M	62 – 63	2	N
11	Length of User Data	M	64 – 68	5	N
12	Reserved	M	69 – 73	5	AB
13	Image Archive Locator	C	74 – (73+U)	Variable (U)	ANS
14	Captured Unparsed MICR Data	C	(74+U) – (73+U+V)	Variable (V)	NBMU
15	Captured High Unparsed MICR Data	C	(74+U+V) – (73+U+V +W)	Variable (W)	NBMU
16	Corrected Unparsed MICR Data	C	(74 +U+V+W) – (73+U+V+W+X)	Variable (X)	NBMU
17	Corrected High Unparsed MICR Data	C	(74+U+V+W+X) – (73+U+V+W+X+Y)	Variable (Y)	NBMU
18	User Field	C	(74+U+V+W+X+Y) – (73+U+V+W+X+Y+Z)	Variable (Z)	ANS

Notes: Fixed length fields that are conditional and are not used shall be filled with Blanks. Variable length fields that are not used (i.e., Size = '0') are omitted.

17.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2

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Type: N Numeric
Defined Values: '34' Return Addendum C Record

17.2 Item Description

A field used to describe additional information about the transaction.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 03 – 22
Size: 20
Type: ANS Alphanumeric/Special

17.3 Image Capture Date

The year, month and day the image is captured. The default shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 23 – 30
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

17.4 Image Capture Time

The time the image is captured. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 31 – 36
Size: 6
Type: NB Numeric/Blank Fill
Format: hhmmss, where:
hh hour
mm minute
ss second
Defined Values: hh '00' through '23'
mm '00' through '59'
ss '00' through '59'

17.5 Microfilm Archive Sequence Number

A number that identifies the item in the microfilm archive system; it may be different than the ECE Institution Item Sequence Number (Field 7) in the Return Record (Type 31) and the Image Archive Locator in this record.

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Usage: Conditional
Shall be present only under clearing arrangements.
Position: 37 – 51
Size: 15
Type: NB Numeric/Blank Fill

17.6 Length of Image Archive Locator

The number of bytes contained in the Image Archive Locator field (Field 13) for this Return Addendum C Record.

Usage: Mandatory
Position: 52 – 55
Size: 4
Type: N Numeric
Defined Values: '0000' Image Archive Locator field is not present
'0001' through '9999' (valid when Image Archive Locator field is present)

17.7 Length of Captured Unparsed MICR Data

The number of bytes contained in the Captured Unparsed MICR Data field (Field 14) for this Return Addendum C Record.

Usage: Mandatory
Position: 56 – 57
Size: 2
Type: N Numeric
Defined Values: '00' Captured Unparsed MICR Data field is not present
'01' through '99' (valid when Captured Unparsed MICR Data field is present)

17.8 Length of Captured High Unparsed MICR Data

The number of bytes contained in the Captured High Unparsed MICR Data field (Field 15) for this Return Addendum C Record when more than one MICR line is present on the check.

Usage: Mandatory
Position: 58 – 59
Size: 2
Type: N Numeric
Defined Values: '00' Captured High Unparsed MICR Data field is not present
'01' through '99' (valid when Captured High Unparsed MICR Data field is present)

17.9 Length of Corrected Unparsed MICR Data

The number of bytes contained in the Corrected Unparsed MICR Data field (Field 16) for this Return Addendum C Record.

Usage: Mandatory
Position: 60 – 61
Size: 2
Type: N Numeric
Defined Values: '00' Corrected Unparsed MICR Data is not present
'01' through '99' (valid when Corrected Unparsed MICR Data field is present)

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17.10 Length of Corrected High Unparsed MICR Data

The number of bytes contained in the Corrected High Unparsed MICR Data field (Field 17) for this Return Addendum C Record when more than one MICR line is present on the check.

Usage: Mandatory
Position: 62 – 63
Size: 2
Type: N Numeric
Defined Values: '00' Corrected High Unparsed MICR Data is not present
'01' through '99' (valid when Corrected High Unparsed MICR Data field is present)

17.11 Length of User Data

The number of bytes contained the User Data field (Field 18) for this Return Addendum C Record.

Usage: Mandatory
Position: 64 – 68
Size: 5
Type: N Numeric
Defined Values: '00000' User Data field is not present
'00001' through '99999' (valid when User Data field is present)

17.12 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 69 – 73
Size: 5
Type: AB All Blank

17.13 Image Archive Locator

A reference used to find the item in the image archive system (for example, may be a URL). See Annex K for more information.

Usage: Conditional
Shall be present if Length of Image Archive Locator (Field 6) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Image Archive Locator (Field 6) of this record .
Type: ANS Alphanumeric/Special

17.14 Captured Unparsed MICR Data

The complete unparsed MICR data as captured from the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as a space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and unreadable characters shall appear as the asterisk ("*"). See Clause 5.2 for translations.

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Usage: Conditional
Shall be present if Length of Captured Unparsed MICR Data (Field 7) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Captured Unparsed MICR Data (Field 7) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

17.15 Captured High Unparsed MICR Data

The complete unparsed MICR data as captured high from the check when more than one MICR line is present on the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as a space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and unreadable characters shall appear as the asterisk ("*"). See Clause 5.2 for translations.

Usage: Conditional
Shall be present if Length of Captured High Unparsed MICR Data (Field 8) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Captured High Unparsed MICR Data (Field 8) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

17.16 Corrected Unparsed MICR Data

The complete unparsed MICR data after repair. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as a space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$"), the R/T symbol shall appear as a number sign ("#") and an unreadable character that has not been corrected shall appear as the asterisk ("*"). See Clause 5.2 for translations.

Usage: Conditional
Shall be present if Length of Corrected Unparsed MICR Data (Field 9) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Corrected Unparsed MICR Data (Field 9) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

17.17 Corrected High Unparsed MICR Data

The complete unparsed MICR data after repair from reading high when more than one MICR line is present on the check. This includes all symbols and characters from the MICR line. It is permissible for spaces to be omitted. Other characters from the MICR line shall appear in this record as follows: a MICR dash shall appear as a dash ("-"), a space shall appear as a space (" "), the on-us symbol shall appear as a forward slash ("/"), the dollar amount symbol shall appear as a dollar sign ("$") and the R/T symbol shall appear as a number sign ("#") and an unreadable character that has not been corrected shall appear as the asterisk ("*"). See Clause 5.2 for translations.

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Usage: Conditional
Shall be present if Length of Corrected High Unparsed MICR Data (Field 10) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Corrected High Unparsed MICR Data (Field 10) of this record
Type: NBMU Numeric/Blank/MICR Unparsed

17.18 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present if Length of User Data (Field 11) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of User Data (Field 11) of this record
Type: ANS Alphanumeric/Special

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18 Return Addendum D Record (Type 35)

The Return Addendum D Record is conditional and contains fourteen fields. It shall be present unless omitted under clearing arrangements. If the item (original or IRD) is truncated by the paying bank, this record shall be present. It is recommended that the paying bank create a Return Addendum D Record if the item was presented electronically. This record follows its immediately preceding Return Addendum B Record (Type 33), or Return Addendum C Record (Type 34), or User Record (Type 68) Format Type 001, or Return Addendum D Record, if present. It is one of four addendum type records available for use with the Return Record (Type 31). Multiple Return Addendum D Records are permitted for a pair of Return Record (Type 31) and Return Addendum B Record (Type 33). Data in the Return Addendum D Records is transferred to Check Detail Addendum C Record (Type 28) when the item is resubmitted for forward collection. This record shall contain the same information from the Check Detail Addendum C Record (Type 28) from the forward presentment, if the item was presented electronically. The descriptions in the fields in this record do not apply when the data was derived from the Check Detail Addendum C Record (Type 28). See Annex L for more information on endorsements.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Return Addendum D Record Number	M	03 – 04	2	N
3	Endorsing Bank Routing Number	C	05 – 13	9	NBD
4	Endorsing Bank Endorsement Date	C	14 – 21	8	NB
5	Endorsing Bank Item Sequence Number	C	22 – 36	15	NB
6	Truncation Indicator	C	37 – 37	1	A
7	Endorsing Bank Conversion Indicator	C	38 – 38	1	AN
8	Endorsing Bank Correction Indicator	C	39 – 39	1	AN
9	Return Reason	C	40 – 41	2	AN
10	Endorsing Bank Magnetic Read Indicator	C	42 – 42	1	AN
11	Endorsing Bank Identifier	C	43 – 43	1	AN
12	Deposit Account Number at BOFD	C	44 – 61	18	ANS
13	User Field	C	62 – 76	15	ANS
14	Reserved	M	77 – 80	4	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

18.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '35' Return Addendum D Record

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18.2 Return Addendum D Record Number

This field shall contain the number representing the chronological order (oldest to newest) in which each Return Addendum D Record (Type 35), associated with the immediately preceding Return Record (Type 31) and Return Addendum B Record (Type 33), was created. The order shall represent the endorsement order with '01' being the oldest endorsement. Return Addendum D Records shall be in the sequential order starting with '01'.

Usage: Mandatory
Position: 03 – 04
Size: 2
Type: N Numeric

18.3 Endorsing Bank Routing Number

A number used to identify the bank that endorsed the check.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 05 – 13
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

or

TTTTT-FFF, where:

TTTTT	Transit Number
FFF	Canadian Financial Institution Number

18.4 Endorsing Bank Endorsement Date

The year, month and day in the endorsement that designates the business date at the endorsing bank.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 14 – 21
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:

YYYY	year
MM	month
DD	day

Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

18.5 Endorsing Bank Item Sequence Number

A number used to identify the item at the endorsing bank.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.

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Position: 22 – 36
Size: 15
Type: NB Numeric/Blank Fill

18.6 Truncation Indicator

An indicator used to identify if this endorsing institution is the truncator of the original check.

Usage: Conditional
It shall be present for original checks that have been truncated. This indicator shall not be used for substitute checks that have been truncated or reconverted.
Position: 37 – 37
Size: 1
Type: A Alphabetic
Defined Values: 'Y' Yes this institution truncated the original check
'N' No this institution did not truncate the original check

18.7 Endorsing Bank Conversion Indicator

A code used to indicate the conversion between the physical document, an image, or a subsequent IRD. The indicator is specific to the action of this endorser.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 38 – 38
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Did not convert physical document
'1' Original check converted to IRD (not valid for electronic exchange)
'2' Original check converted to image
'3' IRD converted to another IRD (not valid for electronic exchange)
'4' IRD converted to image of IRD
'5' Image converted to an IRD (not valid for electronic exchange)
'6' Image converted to another image (e.g., transcoded)
'7' Did not convert image (e.g., same as received from source)
'8' Undetermined

18.8 Endorsing Bank Correction Indicator

An indicator used to identify whether and how the endorsing bank repaired the MICR line.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 39 – 39
Size: 1
Type: AN Alphanumeric
Defined Values: '0' No Repair
'1' Repaired (method unknown)
'2' Repaired without Operator intervention
'3' Repaired with Operator intervention
'4' Undetermined

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18.9 Return Reason

A code used to indicate the reason for non-payment. This is the reason for return under applicable law or exchange agreements.

Usage:	Conditional Shall be present only when a return is being resubmitted electronically. The Return Reason was included in the Return Addendum B Record (Type 33) for the original return and included in the Check Detail Addendum C Record (Type 28) on the re-presentment.	
Position:	40 – 41	
Size:	2	
Type:	AN	Alphanumeric
Defined Values:	See Annex G for allowable values	

18.10 Endorsing Bank Magnetic Read Indicator

An indicator to identify the type of technology used by the endorsing bank to read the MICR codeline on the physical check, and to identify potential fraud suspects when the MICR characters are read using a true magnetic MICR reader. The indicator is specific to the action of this endorser.

Usage:	Conditional Shall be present only under clearing arrangements.	
Position:	42 – 42	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	MICR code line was read with magnetic MICR read technology and MICR characters were present
	‘1’	MICR code line was not read with magnetic MICR read technology
	‘2’	MICR code line was read with magnetic MICR read technology and no magnetic characters were read
	‘3’	Unknown

18.11 Endorsing Bank Identifier

A code used to identify the bank’s role in the collection process.

Usage:	Conditional Shall be present unless omitted under clearing arrangements.	
Position:	43 – 43	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	Depositary Bank (BOFD)
	‘1’	Other Collecting Bank
	‘2’	Other Returning Bank
	‘3’	Payor Bank

18.12 Deposit Account Number at BOFD

A number used to identify the depository account at the Bank of First Deposit. If Deposit Account Number at BOFD (Field 12) in the Check Detail Addendum C Record (Type 28) was received electronically and was used to convey BOFD information, that data shall be transferred to this field.

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Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 44 – 61
Size: 18
Type: ANS Alphanumeric/Special

18.13 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 62 – 76
Size: 15
Type: ANS Alphanumeric/Special

18.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 77 – 80
Size: 4
Type: AB All Blank

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19 Account Totals Record (Type 40)

The Account Totals Record is conditional and contains eight fields. The use of this record is only valid when the Collection Type Indicator (Field 2) in the Cash Letter Header Record (Type 10) is '20'. It shall always follow one of these records: a Cash Letter Header Record (Type 10) or another Account Totals Record. Multiple Account Totals Records are permitted.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Destination Routing Number	M	03 – 11	9	N
3	Key Account or Low Account in Key Account Range	M	12 – 29	18	ANS
4	Key Account or High Account in Key Account Range	M	30 – 47	18	ANS
5	Total Item Count	M	48 – 59	12	N
6	Total Item Amount	M	60 – 73	14	N
7	User Field	C	74 – 77	4	ANS
8	Reserved	M	78 – 80	3	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

19.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '40' Account Totals Record

19.2 Destination Routing Number

A number that identifies the institution that receives and processes the account totals information in this cash letter or file.

Usage: Mandatory
Position: 03 – 11
Size: 9
Type: N Numeric
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

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19.3 Key Account or Low Account in Key Account Range

Account number or low account in an account number range for which item and amount totals are to be reported.

Usage: Mandatory
Position: 12 – 29
Size: 18
Type: ANS Alphanumeric/Special

19.4 Key Account or High Account in Key Account Range

Account number or high account in an account number range for which item and amount totals are to be reported. For a specific account, this account number shall be the same as in Key Account or Low Account in Key Account Range (Field 3) of this record.

Usage: Mandatory
Position: 30 – 47
Size: 18
Type: ANS Alphanumeric/Special

19.5 Total Item Count

The total number of items that belong to the key account or are within the account range.

Usage: Mandatory
Position: 48 – 59
Size: 12
Type: N Numeric

19.6 Total Item Amount

The amount sum value of the check detail items that belong to the key account or are within the account range.

Usage: Mandatory
Position: 60 – 73
Size: 14
Type: N Numeric

19.7 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 74 – 77
Size: 4
Type: ANS Alphanumeric/Special

19.8 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

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Usage: Mandatory
Position: 78 – 80
Size: 3
Type: AB All Blank

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20 Non-Hit Totals Record (Type 41)

The Non-Hit Totals Record is conditional and contains seven fields. The use of this record is only valid when the Collection Type Indicator (Field 2) in the Cash Letter Header Record (Type 10) is '20'. It shall always follow one of these records: a Cash Letter Header Record (Type 10), or Account Totals Record (Type 40), or another Non-Hit Totals Record. Multiple Non-Hit Totals Records are permitted.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Destination Routing Number	M	03 – 11	9	N
3	Non-Hit Indicator	M	12 – 12	1	A
4	Total Item Count	M	13 – 24	12	N
5	Total Item Amount	M	25 – 38	14	N
6	User Field	C	39 – 50	12	ANS
7	Reserved	M	51 – 80	30	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

20.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '41' Non-Hit Totals Record

20.2 Destination Routing Number

A number that identifies the institution that receives and processes the account totals information on this cash letter or file.

Usage: Mandatory
Position: 03 – 11
Size: 9
Type: N Numeric
Format: TTTTAAAAC, where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check Digit

20.3 Non-Hit Indicator

Description of the Non-Hit total provided.

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Usage: Mandatory
Position: 12 – 12
Size: 1
Type: A Alpha
Values 'O' Out of Range only - no Invalid Account
'I' Invalid Account only - no Out of Range

20.4 Total Item Count

Total number of items that either do not belong to the Accounts being reported upon (i.e., Out of Range) or that have invalid account number fields (i.e., Invalid Accounts) based on Non-Hit Indicator.

Usage: Mandatory
Position: 13 – 24
Size: 12
Type: N Numeric

20.5 Total Item Amount

The amount sum value of the check detail items that either do not belong to the Accounts being reported upon (i.e., Out of Range) or that have invalid account number fields (i.e., Invalid Accounts) based on Non-Hit Indicator.

Usage: Mandatory
Position: 25 – 38
Size: 14
Type: N Numeric

20.6 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 39 – 50
Size: 12
Type: ANS Alphanumeric/Special

20.7 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 51 – 80
Size: 30
Type: AB All Blank

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21 Image View Detail Record (Type 50)

The Image View Detail Record is conditional and contains twenty-three fields. In a forward presentment bundle, this record follows its immediately preceding Check Detail Record (Type 25), or follows a Check Detail Addendum A Record (Type 26), or a Check Detail Addendum B Record (Type 27), or a Check Detail Addendum C Record (Type 28), or User Record (Type 68) Format Type 001 if present. In a Return Bundle, this record follows its immediately preceding Return Addendum B Record (Type 33), or a Return Addendum C Record (Type 34), or a Return Addendum D Record (Type 35) or User Record (Type 68) Format Type 001 if present. It can also follow its immediately preceding Credit/Reconciliation Record (Type 61). The Image View Detail Record shall also follow an Image View Data Record (Type 52), or an Image View Analysis Record (Type 54), or Image Test Detail Record (Type 56), if present when an item has multiple image views. The Image View Detail Record shall be present if the Cash Letter Record Type Indicator (Field 8) in the Cash Letter Header Record (Type 10) has Defined Values of 'I' or 'F'. The Image View Detail Record is one of two records (Type 50 and Type 52) that shall be used together to convey a single image view associated with the related Check Detail Record (Type 25) or pair of Return Record (Type 31) and Return Addendum B Record (Type 33) or Credit/Reconciliation Record (Type 61). When there is more than one Image View Detail Record per View Descriptor (i.e., Full View) (Field 9), for a particular Check Detail Record (Type 25) or Return Record (Type 31)/Return Addendum B Record (Type 33) pair or Credit/Reconciliation Record (Type 61), the subsequent Image View Detail Records are considered alternate views for that Check Detail Record (Type 25) or Return Record (Type 31)/Return Addendum B Record (Type 33) pair or Credit/Reconciliation Record (Type 61).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Image Indicator	M	03 – 03	1	AN
3	Image Creator Routing Number	M	04 – 12	9	NBD
4	Image Creator Date	M	13 – 20	8	N
5	Image View Format Indicator	M	21 – 22	2	AN
6	Image View Compression Algorithm Identifier	M	23 – 24	2	AN
7	Image View Type	M	25 – 25	1	AN
8	View Side Indicator	M	26 – 26	1	AN
9	View Descriptor	M	27 – 28	2	AN
10	Digital Signature Indicator	M	29 – 29	1	AN
11	Digital Signature Hash Function Method	C	30 – 31	2	AN
12	Digital Signature Cryptographic Algorithm Method	C	32 – 33	2	AN
13	DSA/RSA Key Size or ECC Curve Number	C	34 – 43	10	ANS
14	Digital Certificate Indicator	M	44 – 44	1	AN
15	Digital Certificate Format	C	45 – 46	2	AN
16	Digital Certificate Conveyance Method	C	47 – 48	2	AN
17	Start of Protected Data	M	49 – 55	7	N
18	Length of Protected Data	M	56 – 62	7	N
19	Image Recreate Indicator	C	63 – 63	1	AN
20	Image Test Override Indicator	C	64 – 64	1	AN
21	Image Capture Time	C	65 – 70	6	NB
22	User Field	C	71 – 76	6	ANS
23	Reserved	M	77 – 80	4	AB

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Note: All fixed length conditional fields that are not used shall be filled with blanks.

Note: If the Image Indicator (Field 2) has Defined Value of '0', the fields in this Image View Detail Record shall have values as defined in Annex C.

21.1 Record Type

A code used to identify the type of record.

Usage:	Mandatory	
Position:	01 – 02	
Size:	2	
Type:	N	Numeric
Defined Values:	'50'	Image View Detail Record

21.2 Image Indicator

A code that indicates the presence and disposition of an image view conveyed in the related Image View Data Record (Type 52). When the image view is not available, the fields in this Image View Detail Record (Type 50) and the related Image View Data Record (Type 52) shall have values as defined in Annex C.

Usage:	Mandatory	
Position:	03 – 03	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Image view not present
	'1'	Image view present, check or substitute check
	'2'	Image view present, other documentation, not check, or substitute check
	'3'	Image view present, unable to determine if Defined Value is '1' or '2'

21.3 Image Creator Routing Number

A number that identifies the financial institution that created the image view in the related Image View Data Record (Type 52) Image Data (Field 27). If this field is not known, the Bundle ECE Institution Routing Number (Field 4) of the Bundle Header Record (Type 20) may be used. The endorsement information conveyed in the applicable Addendum Records (Check Detail Addenda A Record (Type 26), Check Detail Addenda C Record (Type 28), Return Addenda A Record (Type 32) and Return Addenda D Record (Type 35)) provides an electronic endorsement for the image creator.

Usage:	Mandatory	
Position:	04 – 12	
Size:	9	
Type:	NBD	Numeric/Blank Fill/Dash
Format:	TTTTAAAAC, where:	
	TTTT	Federal Reserve Prefix
	AAAA	ABA Institution Identifier
	C	Check Digit

or

TTTTT-FFF, where:

TTTTT	Transit Number
FFF	Canadian Financial Institution Number

or

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Alternate Format for a number that identifies a non-financial institution:
NNNNNNNNN
This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

21.4 Image Creator Date

Date assigned by the image creator for the image view conveyed in the related Image View Data Record (Type 52) Image Data (Field 27). If this field is not known, the Bundle Business Date (Field 5) of the Bundle Header Record (Type 20) may be used.

Usage: Mandatory
Position: 13 – 20
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

21.5 Image View Format Indicator

A code that identifies the type of image format used in the related Image View Data Record (Type 52) Image Data (Field 27). Values '00' through '20' may be used without a pre-existing agreement. Values '21' through '99' shall be used only when an agreement exists indicating that sender and receiver both support the specified image format type as specified below. Use of a Defined Value below indicates complete conformance to that referenced standard. The image format type is also commonly specified by reference to the file extension used when Image Data is saved as an image file. The file extension for each image format is included below for reference. This field and Field 6 in this record may contain self contained formats in which the Image Compression Algorithm Identifier is the same as the Image View Format Indicator. Certain image formats require the use of a specific compression algorithm which is specified in Field 6 of this record. Other formats allow the use of several compression algorithms. Using both fields provides the most flexible and accurate information regarding the Image View Format and Image View Compression Algorithm. See Annex F for the acceptable combinations between the two fields.

Usage: Mandatory
Position: 21 – 22
Size: 2
Type: AN Alphanumeric
Defined Values: Agreement not required:
'00' TIFF 6 (only compression Group 4 Black and White allowed) (See Annex N for information on recommended tags and values); Extension: TIF
'01' through '20' Reserved (agreement is not required)
Agreement required:
'21' JPEG (JFIF); Extension: JPG
'22' PNG (Portable Network Graphics)) (ISO/IEC 15948:2003); Extension: PNG
'23' TIFF 6 with Draft TIFF Technical Note # 2 modifications (compression scheme 7 for Grayscale): Extension: TIF
'24' TIFF 6 (compression 6 for Grayscale): Extension: TIF
'25' JPEG 2000 (ISO/IEC 15444-1:2000); Extension: JP2

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‘26’ IOCA FS 11 (Image Object Content Architecture Function Set 11) (Image Object Content Architecture: Publication SC31-6805-05 March 2004); Extension: ICA
‘27’ through ‘99’ Reserved for future use and supported only under agreement.

21.6 Image View Compression Algorithm Identifier

A code that identifies the algorithm or method used to compress the Image Data in the related Image View Data Record (Type 52) Image Data (Field 27). Values ‘00’ through ‘20’ may be used without a pre-existing agreement. Values ‘21’ through ‘99’ shall be used only when an agreement exists indicating that sender and receiver both support the specified image compression method as specified below. Use of the Defined Values below indicates complete conformance to that referenced standard. This field and Field 5 in this record may contain self-contained formats in which the Image View Format Indicator is the same as the Compression Algorithm Identifier. Certain compression algorithms require the use of a specific image format which is specified in Field 5 of this record. Other formats allow the use of several compression algorithms. Using both fields provides the most flexible and accurate information regarding the Image View Format and Image View Compression Algorithm. See Annex F for the acceptable combinations between the two fields.

Usage: Mandatory
Position: 23 – 24
Size: 2
Type: AN Alphanumeric
Defined Values: Agreement not required:
‘00’ Group 4 facsimile compression (ITU-T Rec. T.563/CCITT Rec. T.6)
‘01’ through ’20’ Reserved (agreement is not required)
Agreement required:
‘21’ JPEG Baseline Grayscale (JPEG Interchange Format) (ITU-T Rec. T.81/ISO/IEC 10918)
‘22’ PNG (Portable Network Graphics) (ISO/IEC 15948:2003);
‘23’ ABIC
‘24’ JPEG 2000 (ISO/IEC 15444-1:2000)
‘25’ LZW (Lempel-Ziv-Welch) (TIFF 6.0 Specification)
‘26’ through ‘99’ Reserved for future use and supported only under agreement.

21.7 Image View Type

A code used to identify whether the image is black and white, grayscale, color, or other representation.

Usage: Mandatory
Position: 25 – 25
Size: 1
Type: AN Alphanumeric
Defined Values: ‘0’ Black and White
‘1’ Grayscale
‘2’ Color
‘3’ Other
‘4’ Unknown

21.8 View Side Indicator

A code that indicates the image view conveyed in the related Image View Data Record (Type 52) Image Data (Field 27). An image view may be a full view of the item (i.e., the entire full face of the document) or a partial view (snippet) as determined by the value of the View Descriptor field (Field 9).

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Usage: Mandatory
Position: 26 – 26
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Front image view
'1' Back image view

21.9 View Descriptor

A code that indicates the nature of the image view conveyed by the Image Data (Field 27) in the Image View Data Record (Type 52). Refer to TR 2 for a more complete description of Area of Interest (See Clause 2). If the view is unknown, Defined Value of '00' shall be used.

Usage: Mandatory
Position: 27 – 28
Size: 2
Type: AN Alphanumeric
Defined Values: '00' Full view
'01' Partial view – unspecified Area of Interest
'02' Partial view – date (issue) Area of Interest
'03' Partial view – payee Area of Interest
'04' Partial view – convenience amount Area of Interest
'05' Partial view – amount in words (legal amount) Area of Interest
'06' Partial view – signature (payor) Area(s) of Interest
'07' Partial view – payor name and address Area of Interest
'08' Partial view – MICR line Area of Interest
'09' Partial view – memo line Area of Interest
'10' Partial view – payor bank name and address Area of Interest
'11' Partial view – payee endorsement Area of Interest
'12' Partial view – Bank Of First Deposit (BOFD) endorsement Area of Interest
'13' Partial view – transit endorsement Area of Interest
'14' through '99' Reserved for X9

21.10 Digital Signature Indicator

A code that indicates the presence or absence of a digital signature for the image view contained in the related Image View Data Record (Type 52) Image Data (Field 27). If present, the Digital Signature is conveyed in the related Image View Data Record (Type 52) Digital Signature (Field 23). This standard does not dictate that a Digital Signature must be present.

Usage: Mandatory
Position: 29 – 29
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Digital Signature is not present
'1' Digital Signature is present

21.11 Digital Signature Hash Function Method

A code used to identify the hash function algorithm to generate and validate the Digital Signature in the related Image View Data Record (Type 52) Digital Signature (Field 23). See Annex M for details on current usage and valid combinations.

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Usage: Conditional
Shall be present if the Digital Signature Indicator (Field 10) in this Image View Detail Record has Defined Value of '1'.
Position: 30 – 31
Size: 2
Type: AN Alphanumeric
Defined Values: '0' SHA-1 (FIPS 180-2) (ANS X9.30-2)
'1' SHA-224 (FIPS 180-2)
'2' SHA-256 (FIPS 180-2)
'3' SHA-384 (FIPS 180-2)
'4' SHA-512 (FIPS 180-2)
'5' through '99' reserved for emerging cryptographic algorithms and technologies.

21.12 Digital Signature Cryptographic Algorithm Method

A code used to identify the cryptographic algorithm to generate and validate the Digital Signature in the related Image View Data Record (Type 52) Digital Signature (Field 23). See Annex M for details on current usage and valid combinations.

Usage: Conditional
Shall be present if the Digital Signature Indicator (Field 10) in this Image View Detail Record has Defined Value of '1'.
Position: 32 – 33
Size: 2
Type: AN Alphanumeric
Defined Values: '0' Digital Signature Algorithm (DSA) (ANS X9.30, FIPS 180-2)
'1' RSA (PKCS#1)
'2' Elliptic Curve DSA (ECDSA) (ANS X9.62)
'3' through '99' reserved for emerging cryptographic algorithms and technologies.

21.13 DSA/RSA Key Size or ECC Curve Number

If the Digital Signature Cryptographic Algorithm Method (Field 12) in this Image View Detail Record has a Defined Value of '0' (DSA) or '1' (RSA), then this field is a number that represents the length in bits of the cryptographic algorithm key used to create the Digital Signature in the related Image View Data Record (Type 52) Digital Signature (Field 23). If the Digital Signature Cryptographic Algorithm Method (Field 12) in this Image View Detail Record has a Defined Value of '2' (ECDSA), then this field is the elliptic curve number used to create the Digital Signature in the related Image View Data Record (Type 52) Digital Signature (Field 23). See Annex M for more details and definitions of allowable values.

Usage: Conditional
Shall be present only under clearing arrangements and when Digital Signature Indicator (Field 10) in this Image View Detail Record has Defined Value of '1'.
Position: 34 – 43
Size: 10
Type: ANS Alphanumeric/Special
Defined Values: If Field 12 of this record has Defined Value of '0' '1024'
If Field 12 of this record has Defined Value of '1' '1024' or greater
If Field 12 of this record has Defined Value of '2' 't163K1' for example
The complete list may be found in ANS X9.62 -2005, Annex B, Table B.1 – Recommended Domain Parameters. The ECC Curve Number (Field 13) is prefixed with 'ansix9' to form the object identifier referenced in the Table.

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21.14 Digital Certificate Indicator

A code used to indicate the presence or absence of a digital certificate for the image view contained in the related Image View Data Record (Type 52) Image Data (Field 27). If present, the Digital Certificate is conveyed by the method identified in the Digital Certificate Conveyance Method (Field 16) of this record.

Usage:	Mandatory	
Position:	44 – 44	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Digital Certificate is not present
	'1'	Digital Certificate is present

21.15 Digital Certificate Format

A code used to identify the format to convey the Digital Certificate. The Digital Certificate Format type is also commonly specified by reference to the file extension used when the Digital Certificate is saved as a certificate file. The file extension for each certificate format is included below for reference. See Annex M for more information.

Usage:	Conditional Shall be present if the Digital Certificate Indicator (Field 14) in this Image View Detail Record has Defined Value of '1'.	
Position:	45 – 46	
Size:	2	
Type:	AN	Alphanumeric
Defined Values:	'00'	X.509 Certificate DER encoded binary format; Extension: .cer
	'01'	X.509 Certificate PKCS #7 binary format; Extension: .p7b
	'02' through '99' Reserved for future use	

21.16 Digital Certificate Conveyance Method

A code used to identify the method to convey the Digital Certificate. See Annex M for more information.

Usage:	Conditional Shall be present if the Digital Certificate Indicator (Field 14) in this Image View Detail Record has Defined Value of '1'.	
Position:	47 – 48	
Size:	2	
Type:	AN	Alphanumeric
Defined Values:	'00'	Digital Certificate conveyed in the associated Image View Data Record (Type 52) Digital Certificate (Field 26)
	'01'	Digital Certificate conveyed in an associated Digital Certificate Record (Type 64) within this file
	'02'	Digital Certificate conveyed in method understood by agreement between the exchange partners.
	'03' through '99' Reserved for future use	

21.17 Start of Protected Data

A number that represents the offset in bytes from the first byte (counted as byte 1) of the image data in the related Image View Data Record (Type 52) Image Data (Field 27) to the first byte of the image data protected by the digital signature.

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Usage: Mandatory
Position: 49 – 55
Size: 7
Type: N Numeric
Defined Values: '0000000' Digital Signature Indicator (Field 10) has Defined Value of '0' Digital Signature is not present
'0000001' through '9999999' Valid offset values

21.18 Length of Protected Data

The number of contiguous bytes of image data in the related Image View Data Record (Type 52) Image Data (Field 27) protected by the digital signature, starting with the byte indicated by the value of the Start of Protected Data in this Image View Detail Record. The Length of Protected Data value shall not exceed the Length of Image Data (Field 20) value in the corresponding Image View Data Record (Type 52).

Usage: Mandatory
Position: 56 – 62
Size: 7
Type: N Numeric
Defined Values: '0000000' Digital Signature Indicator (Field 10) has Defined Value of '0' Digital Signature is not present
'0000001' through '9999999' Valid length values

21.19 Image Recreate Indicator

A code that indicates whether the sender has the ability to recreate the image view conveyed in the related Image View Data Record (Type 52) Image Data (Field 27).

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 63 – 63
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Sender can recreate the image view for the duration of the agreed to retention timeframes.
'1' Sender cannot recreate image view.

21.20 Image Test Override Indicator

An indicator to communicate to a receiving exchange partner that this image view has a detected image test failure that cannot be corrected and that this view shall be accepted regardless of any image test failures. Alternative options to using this view may also be indicated.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 64 – 64
Size: 1
Type: AN Alphanumeric
Defined Values: '0' No override information for this view or not applicable
'A' IQA Fail – Image view reviewed and deemed usable – no alternate format
'B' IQA Fail – Image view reviewed and deemed usable – alternate format included in this file
'C' IQA Fail – Image view reviewed and deemed usable – alternate format included in this

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file and original document available
‘D’ IQA Fail – Image view reviewed and deemed usable – alternate format available
‘E’ IQA Fail – Image view reviewed and deemed usable – original document available
‘F’ IQA Fail – Image view reviewed and deemed usable – original document and alternate format available
‘G’ IQA Fail – Image view reviewed and deemed unusable – no alternate format
‘H’ IQA Fail – Image view reviewed and deemed unusable – alternate format included in this file
‘I’ IQA Fail – Image view reviewed and deemed unusable – alternate format included in this file and original document available
‘J’ IQA Fail – Image view reviewed and deemed unusable – alternate format available
‘K’ IQA Fail – Image view reviewed and deemed unusable – original document available
‘L’ IQA Fail – Image view reviewed and deemed unusable – original document and alternate format available
‘M’ IQA Fail – Image view not reviewed – no alternate format
‘N’ IQA Fail - Image view not reviewed – alternate format included in this file
‘O’ IQA Fail - Image view not reviewed – alternate format included in this file and original document available
‘P’ IQA Fail - Image view not reviewed – alternate format available
‘Q’ IQA Fail - Image view not reviewed – original document available
‘R’ IQA Fail - Image view not reviewed – original document and alternate format available

21.21 Image Capture Time

The time the image is captured. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 65 – 70
Size: 6
Type: NB Numeric/Blank Fill
Format: hhmmss, where:
hh hour
mm minute
ss second
Defined Values: hh ‘00’ through ‘23’
mm ‘00’ through ‘59’
ss ‘00’ through ‘59’

21.22 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements
Position: 71 – 76
Size: 6
Type: ANS Alphanumeric/Special

21.23 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

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Usage: Mandatory
Position: 77 – 80
Size: 4
Type: AB All Blank

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22 Image View Data Record (Type 52)

The Image View Data Record is conditional and contains twenty-eight fields. This record follows its immediately preceding Image View Detail Record (Type 50). The Image View Data Record shall be present if the Cash Letter Type Indicator (Field 8) in the Cash Letter Header Record (Type 10) has Defined Value of 'I' or 'F'. The image capture institution typically creates this record. The Image View Data Record is one of two records (Type 50 and Type 52) that shall be used together to convey a single image view associated with the related Check Detail Record (Type 25) or both the Return Record (Type 31) and Return Addendum B Record (Type 33) or Credit/Reconciliation Record (Type 61).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

See Annex H, Annex K and Annex M for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
	Item Reference Key				
2	ECE Institution Routing Number	M	03 – 11	9	NBD
3	Bundle Business Date	M	12 – 19	8	N
4	Cycle Number	C	20 – 21	2	AN
5	ECE Institution Item Sequence Number	M	22 – 36	15	NB
	Additional Security Information				
6	Security Originator Name	C	37 – 52	16	ANS
7	Security Authenticator Name	C	53 – 68	16	ANS
8	Security Key Name	C	69 – 84	16	ANS
	Clipping Information				
9	Clipping Origin	M	85 – 85	1	AN
10	Clipping Coordinate h1	M	86 – 89	4	N
11	Clipping Coordinate h2	M	90 – 93	4	N
12	Clipping Coordinate v1	M	94 – 97	4	N
13	Clipping Coordinate v2	M	98 – 101	4	N
	Ancillary Data Information				
14	Ancillary Data Indicator	M	102 – 103	2	N
	Length Information				
15	Length of Image Reference Key	M	104 – 107	4	N
16	Length of Digital Signature	M	108 – 112	5	N
17	Length of Digital Certificate Issuer Distinguished Name	M	113 – 117	5	N
18	Length of Digital Certificate Serial Number	M	118 – 122	5	N
19	Length of Digital Certificate	M	123 – 127	5	N
20	Length of Image Data	M	128 – 134	7	N
21	Length of Ancillary Data	M	135 – 139	5	N
	Variable Data				

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FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
22	Image Reference Key	C	140 – (139+T)	Variable (T)	ANS
23	Digital Signature	C	(140+T) – (139+T+U)	Variable (U)	Binary
24	Digital Certificate Issuer Distinguished Name	C	(140+T+U) – (139+T+ U+V)	Variable (V)	ANS
25	Digital Certificate Serial Number	C	(140+T+U+V) – (139+T+U+V+W)	Variable (W)	ANS
26	Digital Certificate	C	(140+T+U+V+W) – (139+T+U+V+W+X)	Variable (X)	Binary
27	Image Data	C	(140+T+U+V+W+X) – (139+T+U+V+W+X+Y)	Variable (Y)	Binary
28	Ancillary Data	C	(140+T+U+V+W+X+Y) – (139+T+U+V+W+X+Y+Z)	Variable (Z)	Binary

Notes: Fixed length fields that are conditional and are not used shall be filled with Blanks. Variable length fields that are not used (i.e., Size = '0') are omitted.

Note: If the Image Indicator (Field 2) in the related Image View Detail Record (Type 50) has Defined Value of '0', the fields in this Image View Detail Record shall have values as defined in Annex C.

22.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '52' Image View Data Record

22.2 ECE Institution Routing Number

A number that identifies the institution that creates the bundle header record. This number is imported from the Bundle ECE Institution Routing Number (Field 4) in the Bundle Header Record (Type 20) associated with the image view conveyed in this Image View Data Record. This field along with the Bundle Business Date (Field 3), Cycle Number (Field 4) and ECE Institution Item Sequence Number (Field 5) shall uniquely identify the item within the institution.

Usage: Mandatory
Position: 03 – 11
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number

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or

Alternate Format for a number that identifies a non-financial institution:

NNNNNNNNN

This Alternate Format is the only format in which blanks are allowed for numbers shorter than nine digits.

22.3 Bundle Business Date

The year, month and day that designates the business date of the bundle. This number is imported from the Bundle Business Dated (Field 5) in the Bundle Header Record (Type 20) associated with the image view conveyed in this Image View Data Record. This field along with the ECE Institution Routing Number (Field 2), Cycle Number (Field 4) and ECE Institution Item Sequence Number (Field 5) shall uniquely identify the item within the institution.

Usage: Mandatory
Position: 12 – 19
Size: 8
Type: N Numeric
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

22.4 Cycle Number

A code assigned by the institution that creates the bundle. Denotes the cycle in which the bundle is created. This number is imported from the Cycle Number (Field 9) in the Bundle Header Record (Type 20) associated with the image view conveyed in this Image View Data Record. This field along with the ECE Institution Routing Number (Field 2), Bundle Business Date (Field 3), and ECE Institution Item Sequence Number (Field 5) shall uniquely identify the item within the institution.

Usage: Conditional
Shall be present if available, unless omitted under clearing arrangements.
Position: 20 – 21
Size: 2
Type: AN Alphanumeric

22.5 ECE Institution Item Sequence Number

A number assigned by the institution that creates the Check Detail Record (Type 25) or Return Record (Type 31) or Credit/Reconciliation Record (Type 61). This number is imported from the ECE Institution Item Sequence Number (Field 7) in the Check Detail Record (Type 25) or the ECE Institution Item Sequence Number (Field 7) in the Return Record (Type 31) or Item Sequence Number (Field 8) in the Credit/Reconciliation Record (Type 61) associated with the image view conveyed in this Image View Data Record. The ECE institution must construct the sequence number to guarantee uniqueness for a given routing number, business day, and cycle number. This field along with the ECE Institution Routing Number (Field 2), Bundle Business Date (Field 3) and Cycle Number (Field 4) shall uniquely identify the item within the institution.

Usage: Mandatory
Position: 22 – 36

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Size: 15
Type: NB Numeric/Blank Fill

22.6 Security Originator Name

A unique designation of the entity that creates the Digital Signature for data to be exchanged. See Annex M for more information.

Usage: Conditional
Shall be present only under clearing arrangements and when the Digital Signature Indicator (Field 10) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: 37 – 52
Size: 16
Type: ANS Alphanumeric/Special

22.7 Security Authenticator Name

Unique designation of the entity that may perform verification of the signed images. This field is typically only used when there is a need to identify a single verification designation. See Annex M for more information.

Usage: Conditional
Shall be present if the Digital Signature Indicator (Field 10) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: 53 – 68
Size: 16
Type: ANS Alphanumeric/Special

22.8 Security Key Name

A name or character sequence used by the signer (originator) to communicate a key identifier to the recipient (authenticator) so the recipient can obtain the key needed to validate the signature. The name is typically used as an identifier related to the key pair used to sign the image. The name is mutually known to the security originator and the security authenticator and is unique to this relationship. See Annex M for more information.

Usage: Conditional
Shall be present if the Digital Signature Indicator (Field 10) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: 69 – 84
Size: 16
Type: ANS Alphanumeric/Special

22.9 Clipping Origin

A code used to define the corner of the conveyed image view that is taken as the reference point (origin) for the clipping coordinates. Top, bottom, left, and right references apply to a view that presents a visually correct orientation. When clipping information is present, the nature of the Area of Interest defined by the clipping rectangle is determined by the value of the View Descriptor (Field 9) in the related Image View Detail Record (Type 50). If clipping coordinates are present and not used, the intended view will not be properly conveyed. See Annex H for more information. If this field is set to '0', then Clipping Coordinate h1 (Field 10), Clipping Coordinate h2 (Field 11), Clipping Coordinate v1 (Field 12) and Clipping Coordinate v2 (Field 13) shall be '0000'. If the view is unknown, Defined Value of '0' shall be used.

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Usage:	Mandatory	
Position:	85 – 85	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	Clipping information is not present
	‘1’	Clipping origin is top left corner of image view
	‘2’	Clipping origin is top right corner of image view
	‘3’	Clipping origin is bottom right corner of image view
	‘4’	Clipping origin is bottom left corner of image view

22.10 Clipping Coordinate h1

A number that represents the horizontal offset in pixels from the clipping origin to the nearest vertical side of the clipping rectangle. The clipping coordinates (h1, h2, v1, v2) convey the clipping rectangle’s offsets in both horizontal (h) and vertical (v) directions. The offset values collectively establish the bounding sides of the clipping rectangle. Pixels on the boundary of the clipping rectangle are included in the selected array of pixels. The first pixel of the selected array is at offset (h1, v1) and the last pixel of the selected array is at offset (h2, v2). The corner pixel at the origin of the image view is assumed to have the offset value (0, 0). If Clipping Origin (Field 9) has Defined Value of ‘0’, this field shall be ‘0000’. See Annex H for more information.

Usage:	Mandatory	
Position:	86 – 89	
Size:	4	
Type:	N	Numeric
Defined Values:	‘‘0000’ through ‘9999’	

22.11 Clipping Coordinate h2

A number that represents the horizontal offset in pixels from the clipping origin to the furthermost vertical side of the clipping rectangle. If Clipping Origin (Field 9) has Defined Value of ‘0’, this field shall be ‘0000’. See Annex H for more information.

Usage:	Mandatory	
Position:	90 – 93	
Size:	4	
Type:	N	Numeric
Defined Values:	‘0000’ through ‘9999’	

22.12 Clipping Coordinate v1

A number that represents the vertical offset in pixels from the clipping origin to the nearest horizontal side of the clipping rectangle. If Clipping Origin (Field 9) has Defined Value of ‘0’, this field shall be ‘0000’. See Annex H for more information.

Usage:	Mandatory	
Position:	94 – 97	
Size:	4	
Type:	N	Numeric
Defined Values:	‘0000’ through ‘9999’	

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22.13 Clipping Coordinate v2

A number that represents the vertical offset in pixels from the clipping origin to the furthermost horizontal side of the clipping rectangle. If Clipping Origin (Field 9) has Defined Value of '0', this field shall be '0000'. See Annex H for more information.

Usage: Mandatory
Position: 98 – 101
Size: 4
Type: N Numeric
Defined Values: '0000' through '9999'

22.14 Ancillary Data Indicator

A code that indicates the nature of the data conveyed in the Ancillary Data (Field 28) in this Image View Data Record. Any codes that are defined or used shall specifically define how the data in the Ancillary Data (Field 28) shall be defined and interpreted. X9 will assign new codes with special uses in the range of '01' through '88'.

Usage: Mandatory
Position: 102 – 103
Size: 2
Type: N Numeric
Defined Values: '00' Ancillary data is not present
'01' through '88' reserved for X9 use
'89' through '99' defined by the exchange partners

22.15 Length of Image Reference Key

The number of bytes contained in the Image Reference Key (Field 22) in this Image View Data Record.

Usage: Mandatory
Position: 104 – 107
Size: 4
Type: N Numeric
Defined Values: '0000' Image Reference Key (Field 22) is not present
'0001' through '9999' Valid when Image Reference Key (Field 22) is present

22.16 Length of Digital Signature

The number of bytes contained in the Digital Signature (Field 23) in this Image View Data Record.

Usage: Mandatory
Position: 108 – 112
Size: 5
Type: N Numeric
Defined Values: '00000' Digital Signature (Field 23) is not present
'00001' through '99999' Valid when Digital Signature (Field 23) is present

22.17 Length of Digital Certificate Issuer Distinguished Name

The number of bytes contained in the Digital Certificate Issuer Distinguished Name (Field 24) in this Image View Data Record.

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Usage: Mandatory
Position: 113 – 117
Size: 5
Type: N Numeric
Defined Values: ‘00000’ Digital Certificate Issuer Distinguished Name (Field 24) is not present
‘00001’ through ‘99999’ Valid when Digital Certificate Issuer Distinguished Name (Field 24) is present

22.18 Length of Digital Certificate Serial Number

The number of bytes contained in the Digital Certificate Serial Number (Field 25) in this Image View Data Record.

Usage: Mandatory
Position: 118 – 122
Size: 5
Type: N Numeric
Defined Values: ‘00000’ Digital Certificate Serial Number (Field 25) is not present
‘00001’ through ‘99999’ Valid when Digital Certificate Serial Number (Field 25) is present

22.19 Length of Digital Certificate

The number of bytes contained in the Digital Certificate (Field 26) in this Image View Data Record.

Usage: Mandatory
Position: 123 – 127
Size: 5
Type: N Numeric
Defined Values: ‘00000’ Digital Certificate (Field 26) is not present
‘00001’ through ‘99999’ Valid when Digital Certificate (Field 26) is present

22.20 Length of Image Data

The number of bytes contained in the Image Data (Field 27) in this Image View Data Record.

Usage: Mandatory
Position: 128 – 134
Size: 7
Type: N Numeric
Defined Values: ‘0000000’ Image Data (Field 27) is not present
‘0000001’ through ‘9999999’ Valid when Image Data (Field 27) is present

22.21 Length of Ancillary Data

The number of bytes contained in the Ancillary Data (Field 28) in this Image View Data Record.

Usage: Mandatory
Position: 135 – 139
Size: 5
Type: N Numeric
Defined Values: ‘00000’ Ancillary Data (Field 28) is not present
(Ancillary Data Indicator (Field 14) has value ‘00’)
‘00001’ through ‘99999’ Valid when Ancillary Data (Field 28) is present

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22.22 Image Reference Key

A designator assigned by the ECE institution that creates the Check Detail, Return, Credit/Reconciliation and Image View Records. This designator uniquely identifies the item image to that ECE institution. This designator could be a key that would be used by the creating institution to locate the unique associated image or it could provide a full access path and name that would allow direct external look up and access of the image. For example, this could be a URL. This field typically matches the Image Archive Locator (Field 13) in the Check Detail Addendum B Record (Type 27), or Return Addendum C Record (Type 34), if either is used. See Annex K for more information in developing the Image Key.

Usage: Conditional
Shall be present if the Item Reference Key consisting of Fields 2 – 5 in this record is not unique and Length of Image Reference Key (Field 15) in this Image View Data Record has a non-zero value.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Image Reference Key (Field 15) of this record.
Type: ANS Alphanumeric/Special

22.23 Digital Signature

The Digital Signature created by applying the hash function and cryptographic algorithms and private/secret key to the data to be protected. The Digital Signature provides user authentication and data integrity.

Usage: Conditional
Shall be present if Digital Signature Indicator (Field 10) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Signature (Field 16) of this record.
Type: Binary

22.24 Digital Certificate Issuer Distinguished Name

The Digital Certificate Issuer Distinguished Name along with the Digital Certificate Serial Number uniquely associates this image to its Digital Certificate. Using the standard method for X.509 digital certificates, its value shall be one or more relative name pairs (e.g., CN=Check 21, OU=VeriSign, etc.) that uniquely identify the issuer of the Digital Certificate. See Annex M for more information.

Usage: Conditional
Shall be present if Digital Certificate Indicator (Field 14) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate Issuer Distinguished Name (Field 17) of this record.
Type: ANS Alphanumeric/Special

22.25 Digital Certificate Serial Number

The Digital Certificate Serial Number along with the Digital Certificate Issuer Distinguished Name uniquely associates the image to its Digital Certificate. It shall be the serial number created by the issuer of the Digital Certificate. See Annex M for more information.

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Usage: Conditional
Shall be present if Digital Certificate Indicator (Field 14) in the related Image View Detail Record (Type 50) has Defined Value of '1'.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate Serial Number (Field 18) of this record.
Type: ANS Alphanumeric/Special

22.26 Digital Certificate

The Digital Certificate is present in this field if the Digital Certificate Indicator (Field 14) has the value of '1' and the Digital Certificate Conveyance Method (Field 16) has the value of '00' in the related Image View Detail Record (Type 50). The Digital Certificate securely conveys the public key needed to verify the Digital Signature of this image and to identify the owner of the public key. The Digital Certificate shall have the format as specified in the Digital Certificate Format (Field 15) of the related Image View Detail Record (Type 50). See Annex M for more information.

Usage: Conditional
Shall be present if the Digital Certificate Indicator (Field 14) has the value of '1'and the Digital Certificate Conveyance Method (Field 16) has the value of '00' in the related Image View Detail Record (Type 50).
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate (Field 19) of this record.
Type: Binary

22.27 Image Data

The Image Data field contains the image view. The Image Data generally consists of an image header and the compressed image raster data. The image header provides information that is required to interpret the image raster data. The image raster data contains the scanned image of the physical item in raster (line by line) format. Each scan line comprises a set of concatenated pixels. The image comprises a set of scan lines. The image raster data is typically compressed to reduce the number of bytes needed to transmit and store the image. The header/image format type is defined by the Image View Format Indicator (Field 5) in the corresponding Image View Detail Record (Type 50). The syntax and semantics of the image header/image format are understood by referring to the appropriate image format specification. The compression scheme used to compress the image raster data is specified in the Image View Compression Algorithm Identifier (Field 6) of the associated Image View Detail Record (Type 50), and in the image header portion of the Image Data or by association with the selected image format.

Usage: Conditional
Shall be present if Image Indicator (Field 2) in the related Image View Detail Record (Type 50) has Defined Value of '1', '2', or '3'.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Image Data (Field 20) of this record.
Type: Binary

22.28 Ancillary Data

This Ancillary Data field is used to convey Binary data associated with the image view data conveyed in Image Data (Field 27) of this Image View Data Record. The syntax and semantics for this field, including how the Binary data is interpreted, is defined in accordance with the value of the Ancillary Data Indicator (Field 14). Depending

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on the detailed definition for this field, the Binary data may be interpreted as any of the character data types specified in Character and Field Data Type Specifications see Clause 5.

Usage: Conditional
Shall be present if Ancillary Data Indicator (Field 14) is not equal to '00'
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Ancillary Data (Field 21) of this record
Type: Binary

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23 Image View Analysis Record (Type 54)

The Image View Analysis Record is conditional and contains forty-seven fields. This record follows its corresponding Image View Data Record (Type 52). It shall be present only under clearing arrangements. When present, there is one Image View Analysis Record for each image view. (This standard recommends using Image Test Summary Record (Type 55) and Image Test Detail Record(s) (Type 56) instead of this record, since it is the intention of the work group to remove this record at the next standard review.)

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Global Image Defect	M	03 – 03	1	AN
3	Global Image Usability	M	04 – 04	1	AN
4	Imaging Bank Specific Test	M	05 – 05	1	AN
	Image Defect Information (Fields 5 – 25)				
5	Partial Image	C	06 – 06	1	AN
6	Excessive Image Skew	C	07 – 07	1	AN
7	Piggyback Image	C	08 – 08	1	AN
8	Too Light	C	09 – 09	1	AN
9	Too Dark	C	10 – 10	1	AN
10	Streaks and or Bands	C	11 – 11	1	AN
11	Below Minimum Image Size	C	12 – 12	1	AN
12	Exceeds Maximum Image Size	C	13 – 13	1	AN
13	Reserved	M	14 – 14	1	AB
14	Reserved	M	15 – 15	1	AB
15	Reserved	M	16 – 16	1	AB
16	Reserved	M	17 – 17	1	AB
17	Reserved	M	18 – 18	1	AB
18	Reserved	M	19 – 19	1	AB
19	Reserved	M	20 – 20	1	AB
20	Reserved	M	21 – 21	1	AB
21	Reserved	M	22 – 22	1	AB
22	Reserved	M	23 – 23	1	AB
23	Reserved	M	24 – 24	1	AB
24	Reserved	M	25 – 25	1	AB
25	Reserved	M	26 – 26	1	AB
	Image Usability Information (Fields 26 – 45)				
26	Image-Enabled POD	C	27 – 27	1	AN
27	Source Document Bad	C	28 – 28	1	AN
28	Date (Issue) Usability	C	29 – 29	1	AN

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FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
29	Payee Usability	C	30 – 30	1	AN
30	Convenience Amount Usability	C	31 – 31	1	AN
31	Amount in Words (Legal Amount) Usability	C	32 – 32	1	AN
32	Signature (Payor) Usability	C	33 – 33	1	AN
33	Payor Name and Address Usability	C	34 – 34	1	AN
34	MICR Line Usability	C	35 – 35	1	AN
35	Memo Line Usability	C	36 – 36	1	AN
36	Payor Bank Name and Address Usability	C	37 – 37	1	AN
37	Payee Endorsement Usability	C	38 – 38	1	AN
38	Bank of First Deposit Endorsement Usability	C	39 – 39	1	AN
39	Transit Endorsement Usability	C	40 – 40	1	AN
40	Reserved	M	41 – 41	1	AB
41	Reserved	M	42 – 42	1	AB
42	Reserved	M	43 – 43	1	AB
43	Reserved	M	44 – 44	1	AB
44	Reserved	M	45 – 45	1	AB
45	Reserved	M	46 – 46	1	AB
	Image Analysis User Information (Field 46)				
46	User Field	C	47 – 66	20	ANS
47	Reserved	M	67 – 80	14	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

23.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '54' Image View Analysis Record

23.2 Global Image Defect

A code that indicates whether the image view was tested for any of the conditions related to image defects defined in the Image Defect Information (Fields 5 – 25).

Usage: Mandatory
Position: 03 – 03
Size: 1
Type: AN Alphanumeric
Defined Values: '0' The image was not tested for any of the image defect conditions

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‘1’ The image was tested and one or more image defect conditions were reported
‘2’ The image was tested and no image defect conditions were reported

23.3 Global Image Usability

A code that indicates whether the image view was tested for any of the conditions related to image usability defined in the Image Usability Information (Fields 26 – 45).

Usage: Mandatory
Position: 04 – 04
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ The image was not tested for any of the image usability conditions
‘1’ The image was tested and one or more image usability conditions were reported
‘2’ The image was tested and no image usability conditions were reported

23.4 Imaging Bank-Specific Test

A code that indicates if a bank-specific test was performed and if a condition was present or not. The capture institution may be able to perform specific tests that can indicate a potentially problematic image view caused by conditions other than those listed in the Image Defect and Image Usability Information fields. By mutual agreement, clearing partners can use the User Field (Field 46) to report the presence or absence of additional image conditions found through tests that are particular to the specific imaging institution. The meaning and interpretation of the User Field data must be understood and agreed upon between participants.

Usage: Mandatory
Position: 05 – 05
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ No user-defined tests were made for other image defect/usability conditions
‘1’ Other user-defined image conditions were tested and one or more are reported in the User Field (Field 46)
‘2’ Other user-defined image conditions were tested and none are reported in the User Field (Field 46)

23.5 Partial Image

A code used to indicate if only a portion of the image view is represented digitally while the other portion is suspected to be missing or corrupt.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 06 – 06
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ Test not done
‘1’ Condition present
‘2’ Condition not present

23.6 Excessive Image Skew

A code used to indicate if the image view skew exceeds an acceptable value. This value is specific to the imaging institution’s own defined requirements and/or constraints.

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Usage: Conditional
Shall be present only under clearing arrangements.
Position: 07 – 07
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' Condition present
'2' Condition not present

23.7 Piggyback Image

A code used to indicate if a "piggyback" condition has been detected. With a "piggyback" condition, the intended image view may be extended, obscured, or replaced by image(s) of additional document(s). A piggyback occurs when two or more documents are fed together and captured as one document when only a single document should have been fed and captured.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 08 – 08
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' Condition present
'2' Condition not present

23.8 Too Light

A code used to indicate if the image view is too light. The value is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 09 – 09
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' Condition present
'2' Condition not present

23.9 Too Dark

A code used to indicate if the image view is too dark. The value is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 10 – 10
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' Condition present
'2' Condition not present

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23.10 Streaks and or Bands

A code used to indicate if the image view is likely corrupted due to streaks and/or bands. Streaks and bands can be caused by such problems as dirt, dust, ink or debris on a lens or in the optical path, and failures in the imaging equipment scanner.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	11 – 11	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	Condition present
	'2'	Condition not present

23.11 Below Minimum Image Size

A code used to indicate if the size of the compressed image view is below an acceptable value. The value is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	12 – 12	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	Condition present
	'2'	Condition not present

23.12 Exceeds Maximum Image Size

A code used to indicate if the size of the compressed image view is above an acceptable value. The value is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	13 – 13	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	Condition present
	'2'	Condition not present

23.13 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage:	Mandatory	
	Reserved	
Position:	14 – 14	
Size:	1	
Type:	AB	All Blank
Defined Values:	To be defined by Accredited Standards Committee X9	

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23.14 Reserved

Description identical (except for position) to 23.13.

23.15 Reserved

Description identical (except for position) to 23.13.

23.16 Reserved

Description identical (except for position) to 23.13.

23.17 Reserved

Description identical (except for position) to 23.13.

23.18 Reserved

Description identical (except for position) to 23.13.

23.19 Reserved

Description identical (except for position) to 23.13.

23.20 Reserved

Description identical (except for position) to 23.13.

23.21 Reserved

Description identical (except for position) to 23.13.

23.22 Reserved

Description identical (except for position) to 23.13.

23.23 Reserved

Description identical (except for position) to 23.13.

23.24 Reserved

Description identical (except for position) to 23.13.

23.25 Reserved

Description identical (except for position) to 23.13.

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23.26 Image-Enabled POD

A code used to indicate if the image view was used within an image-enabled POD (Proof of Deposit) application.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	27 – 27	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	It is unknown whether the image was used within an image-enabled POD application.
	'1'	Image was not used within an image-enabled POD application.
	'2'	Image was used within an image-enabled POD application.

23.27 Source Document Bad

A code used to indicate if it is possible to obtain a better image from the source document when it is known that the current image of the document is unusable.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	28 – 28	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	Image is unusable. It is not possible to obtain a better image since the source document is judged bad.
	'2'	Image is unusable. It may be possible to obtain a better image since the source document is judged good.

23.28 Date (Issue) Usability

A code used to indicate if the date Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	29 – 29	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	From the image the date is deemed unusable and unreadable
	'2'	From the image the date is deemed usable and readable

23.29 Payee Usability

A code used to indicate if the payee name Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	30 – 30	

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Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	From the image the payee is deemed unusable and unreadable
	'2'	From the image the payee is deemed usable and readable

23.30 Convenience Amount Usability

A code used to indicate if the convenience amount Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	31 – 31	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	From the image the convenience amount is deemed unusable and unreadable
	'2'	From the image the convenience amount is deemed usable and readable

23.31 Amount in Words (Legal Amount) Usability

A code used to indicate if the amount in words (legal amount) Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	32 – 32	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	From the image the amount in words is deemed unusable and unreadable
	'2'	From the image the amount in words is deemed usable and readable

23.32 Signature (Payor) Usability

A code used to indicate if the signature Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage:	Conditional	
	Shall be present only under clearing arrangements.	
Position:	33 – 33	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	'0'	Test not done
	'1'	From the image the signature(s) is/are deemed unusable and unreadable
	'2'	From the image the signature(s) is/are deemed usable and readable

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23.33 Payor Name and Address Usability

A code used to indicate if the payor name and address Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 34 – 34
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the payor name and address is deemed unusable and unreadable
'2' From the image the payor name and address is deemed usable and readable

23.34 MICR Line Usability

A code used to indicate if the original MICR line Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 35 – 35
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the MICR line is deemed unusable and unreadable
'2' From the image the MICR line is deemed usable and readable

23.35 Memo Line Usability

A code used to indicate if the memo line Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 36 – 36
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the memo line is deemed unusable and unreadable
'2' From the image the memo line is deemed usable and readable

23.36 Payor Bank Name and Address Usability

A code used to indicate if the payor bank name and address Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.

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Position: 37 – 37
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the payor bank name and address is deemed unusable and unreadable
'2' From the image the payor bank name and address is deemed usable and readable

23.37 Payee Endorsement Usability

A code used to indicate if the payee endorsement Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 38 – 38
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the payee endorsement is deemed unusable and unreadable
'2' From the image the payee endorsement is deemed usable and readable

23.38 Bank of First Deposit Endorsement Usability

A code used to indicate if the Bank of First Deposit (BOFD) endorsement Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 39 – 39
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the BOFD endorsement is deemed unusable and unreadable
'2' From the image the BOFD endorsement is deemed usable and readable

23.39 Transit Endorsement Usability

A code used to indicate if the transit endorsement Area of Interest is usable and readable from the image. The definition of the Area of Interest for image usability testing purposes is specific to the imaging institution's own defined requirements and/or constraints.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 40 – 40
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Test not done
'1' From the image the transit endorsement(s) is/are deemed unusable and unreadable
'2' From the image the transit endorsement(s) is/are deemed usable and readable

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23.40 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Reserved
Position: 41 – 41
Size: 1
Type: AB All Blank
Defined Values: To be defined by Accredited Standards Committee X9

23.41 Reserved

Description identical (except for position) to 23.40.

23.42 Reserved

Description identical (except for position) to 23.40.

23.43 Reserved

Description identical (except for position) to 23.40.

23.44 Reserved

Description identical (except for position) to 23.40.

23.45 Reserved

Description identical (except for position) to 23.40.

23.46 User Field

Under agreement, this field may be used in conjunction with the Imaging Bank Specific Test Field (Field 4) to convey the results of user-specific image view analysis tests.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 47 – 66
Size: 20
Type: ANS Alphanumeric/Special

23.47 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 67 – 80
Size: 14
Type: AB All Blank

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24 Image Test Summary Record (Type 55)

The Image Test Summary Record is conditional and contains fourteen fields. The Image Test Summary Record contains summary information pertaining to a set of image tests, the details of which are conveyed in the Image Test Detail Record(s) (Type 56) immediately following an Image Test Summary Record. The Image Test Summary Record shall be present only under clearing arrangements.

Multiple Image Test Summary Records are allowed. This facilitates grouping image test results having common attributes such as test outcomes reported by a specific institution or entity. Each Image Test Summary Record used shall be followed by at least one Image Test Detail Record (Type 56).

The Image Test Summary Record follows its corresponding Image View Data Record (Type 52), an Image View Analysis Record (Type 54), or an Image Test Detail Record (Type 56).

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Number of Image Tests	M	03 – 05	3	N
3	Test Date	C	06 – 13	8	NB
4	Test Time	C	14 – 19	6	NB
5	Image Test Group	C	20 – 21	2	NB
6	Testing Organization ID Indicator	M	22 – 22	1	AN
7	Testing Organization ID	C	23 – 31	9	ANS
8	Testing Organization ID Modifier	C	32 – 51	20	ANS
9	Global Image Test Flag	C	52 – 52	1	AN
10	Image Test Supplier ID Indicator	M	53 – 53	1	AN
11	Image Test Supplier ID	C	54 – 62	9	ANS
12	Image Test Supplier ID Modifier	C	63 – 77	15	ANS
13	User Field	C	78 – 97	20	ANS
14	Reserved	M	98 – 120	23	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

24.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '55' Image Test Summary Record

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24.2 Number of Image Tests

The number of Image Test Detail Records (Type 56) that immediately follow and pertain to this record.

Usage: Mandatory
Position: 03 – 05
Size: 3
Type: N Numeric
Defined Values: '001' through '999'

24.3 Test Date

The year, month and day the testing institution created this record. The default date shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 06 – 13
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '2004' through '9999'
MM '01' through '12'
DD '01' through '31'

24.4 Test Time

The time the testing organization created this record. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 14 – 19
Size: 6
Type: NB Numeric/Blank Fill
Format: hhmmss, where:
hh hour
mm minute
ss second
Defined Values: hh '00' through '23'
mm '00' through '59'
ss '00' through '59'

24.5 Image Test Group

A code used to identify the Image Test Group.

Usage: Conditional
Shall be present only under clearing arrangements
Position: 20 – 21

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Size: 2
Type: NB Numeric/Blank Fill
Defined Values: '00' –'49' – Reserved for X9 use
'50' – '99' - Reserved for Image Test Groups as defined by users of this standard

24.6 Testing Organization ID Indicator

A code used to indicate the type and format used in Testing Organization ID (Field 7) of this record. Values ('1'-'4') are listed in order of preference.

Usage: Mandatory
Position: 22 – 22
Size: 1
Type: AN Numeric
Defined Values: '0' Not Used
'1' Routing Number
'2' DUNS Number
'3' Federal Tax Identification Number
'4' Other

24.7 Testing Organization ID

A number that identifies the institution that created this record.

Usage: Conditional
Shall be present if Testing Organizations ID Indicator (Field 6) is not equal to '0'.
Position: 23 – 31
Size: 9
Type: ANS Alphanumeric/Special
Format: Routing Number formats:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '1'):
TTTTAAAAC where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check digit

or

TTTTT-FFF where:
TTTTT Canadian Transit Number
FFF Canadian Financial Institution Number

or

DUNS Number format:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '2'):
XXXXXXXXX where "X" is a numeric value

or

Federal Tax Identification Number format:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '3'):
XXXXXXXXX where "X" is a numeric value
The "dash" in the Federal Tax Identification Number (XX-XXXXXXX) is dropped in the Federal Tax Identification Number format

or

Other
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '4'):
Any combination of alphanumeric special characters agreed to by the exchange partners.

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24.8 Testing Organization ID Modifier

Identification information provided by the testing organization identified in Testing Organization ID (Field 7) of this record. The syntax and semantics of this information is known to the testing organization.

Usage: Conditional
Shall be present only under clearing arrangements
Position: 32 – 51
Size: 20
Type: ANS Alphanumeric/Special

24.9 Global Image Test Flag

A code that identifies whether one or more Image Test Flags (Field 5) in the Image Test Detail Record (Type 56) associated with this Image Test Summary Record contain the value ‘1’ (image test failed) or ‘3’ (image test indeterminate). This code can also be used to identify whether a human has examined the image and determined that any reported "fail" or "indeterminate" conditions are actually "pass" conditions.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 52 – 52
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ No Image Test Flags (Field 5) in the Image Test Detail Record (Type 56) have Defined Value of ‘1’ or ‘3’
‘1’ One or more Image Test Flags (Field 5) in the Image Test Detail Record (Type 56) have Defined Value of ‘1’ or ‘3’
‘2’ One or more Image Test Flags (Field 5) in the Image Test Detail Record (Type 56) have Defined Value of ‘1’ or ‘3’, but human inspection has determined that all results for the tests reported are "pass"

24.10 Image Test Supplier ID Indicator

A code used to indicate the type of Identifier used in Image Test Supplier ID (Field 11) of this record. Values are listed in order of preference.

Usage: Mandatory
Position: 53 – 53
Size: 1
Type: AN Alphanumeric
Defined Values:
‘0’ Not Used
‘1’ Routing Number
‘2’ DUNS Number
‘3’ Federal Tax Identification Number
‘4’ Other

24.11 Image Test Supplier ID

A number that identifies the supplier for the test system (i.e., software, hardware) used to generate the test results associated with this Image Test Summary Record.

Usage: Conditional
Shall be present if Image Test Supplier ID Indicator (Field 10) is not equal to ‘0’.

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Position: 54 – 62
Size: 9
Type: ANS Alphanumeric/Special
Format: Routing Number formats:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '1'):
TTTTAAAAC where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check digit

or

TTTTT-FFF where:

TTTTT	Canadian Transit Number
FFF	Canadian Financial Institution Number

or

DUNS Number format:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '2'):
XXXXXXXXX where "X" is a numeric value

or

Federal Tax Identification Number format:
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '3'):
XXXXXXXXX where "X" is a numeric value
The "dash" in the Federal Tax Identification Number (XX-XXXXXXX) is dropped in the Federal Tax Identification Number format

or

Other
(Applicable when Testing Organization ID Indicator (Field 6) has Defined Value = '4'):
Any combination of alphanumeric special characters agreed to by the exchange partners.

24.12 Image Test Supplier ID Modifier

Information to identify the image test system (i.e., hardware, software) used by the testing organization (for example, could be a software or hardware product name). The syntax and semantics of this information is known to the local testing organization.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 63 – 77
Size: 15
Type: ANS Alphanumeric/Special

24.13 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under certain clearing arrangements.
Position: 78 – 97
Size: 20
Type: ANS Alphanumeric/Special

24.14 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

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Usage: Mandatory
Position: 98 – 120
Size: 23
Type: AB All Blank

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25 Image Test Detail Record (Type 56)

The Image Test Detail Record is conditional and contains eleven fields. One Image Test Detail Record is used to convey the outcome of one image test. Multiple Image Test Detail Records are allowed. The Image Test Detail Record shall be present only under clearing arrangements.

The Image Test Detail Record follows its corresponding Image Test Summary Record (Type 55), or another Image Test Detail Record. The image test only applies to the immediately preceding specified view in the Image View Detail Record (Type 50) and Image View Data Record (Type 52).

Detailed image test definitions (including content for test results and test parameters, where applicable) are contained in X9 Registry for Check Image Tests which can be found on the X9 web site at www.X9.org.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Image Test Number	M	03 – 08	6	ANS
3	Image Test Version	M	09 – 10	2	N
4	Image Test Method	C	11 – 11	1	AN
5	Image Test Flag	M	12 – 12	1	AN
	Length Information				
6	Test Results Length	M	13 – 15	3	N
7	Test Parameters Length	M	16 – 18	3	N
8	User Test Data Length	M	19 – 21	3	N
	Test Results				
9	Test Results	C	22 – (21+X)	Variable (X)	ANC
	Test Parameters				
10	Test Parameters	C	(22+X) – (21+X+Y)	Variable (Y)	ANC
	User Test Data				
11	User Test Data	C	(22+X+Y) – (21+X+Y+Z)	Variable (Z)	ANC

Notes: Fixed length fields that are conditional and are not used shall be filled with Blanks. Variable length fields that are not used (i.e., Size = '0') are omitted.

25.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '56' Image Test Detail Record

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25.2 Image Test Number

A number used to identify the image test.

Usage:	Mandatory
Position:	03 – 08
Size:	6
Type:	ANS Alphanumeric/Special
Defined Values:	Refer to X9 Registry for Check Image Tests at www.X9.org for defined values and image test definitions.

25.3 Image Test Version

A number used to identify the image test version.

Usage:	Mandatory
Position:	09 – 10
Size:	2
Type:	N Numeric
Defined Values:	Refer to X9 Registry for Check Image Tests www.X9.org for defined values and image test definitions.

25.4 Image Test Method

A code used to indicate whether the test was performed by an automated method or by a human.

Usage:	Conditional Shall be present only under clearing arrangements.	
Position:	11 – 11	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	Image test method is unknown
	‘1’	Image test performed by an automated method
	‘2’	Image test performed by a human

25.5 Image Test Flag

A code that indicates the outcome of the image test defined by the Image Test Number (Field 2) and the Image Test Version (Field 3) of this Record.

Usage:	Mandatory	
Position:	12 – 12	
Size:	1	
Type:	AN	Alphanumeric
Defined Values:	‘0’	Condition not tested
	‘1’	Condition tested and result = fail
	‘2’	Condition tested and result = pass
	‘3’	Condition tested and result = indeterminate

25.6 Test Results Length

The number of characters in Test Results (Field 9) in this Record. Length includes commas used as delimiters.

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Usage: Mandatory
Position: 13 – 15
Size: 3
Type: N Numeric
Defined Values: '000' Test Results (Field 9) is not present
'001' through '999' Valid when Test Results (Field 9) is present

25.7 Test Parameters Length

The number of characters in Test Parameters (Field 10) in this Record. Length includes commas used as delimiters.

Usage: Mandatory
Position: 16 – 18
Size: 3
Type: N Numeric
Defined Values: '000' Test Parameters (Field 10) is not present
'001' through '999' Valid when Test Parameters (Field 10) is present

25.8 User Test Data Length

The number of characters in User Test Data Field (Field 11) in this Record. Length includes commas used as delimiters.

Usage: Mandatory
Position: 19 – 21
Size: 3
Type: N Numeric
Defined Values: '000' User Test Data (Field 11) is not present
'001' through '999' Valid when User Test Data (Field 11) is present

25.9 Test Results

The results reported by the testing organization for the image test defined by the Image Test Number (Field 2) and Image Test Version (Field 3) of this Record.

Usage: Conditional
Shall be present if Test Results Length (Field 6) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value of Test Results Length (Field 6) of this record.
Type: ANC Alphanumeric/Comma Delimited (Refer to Annex E for Rules for Using "ANC" Data Type)
Defined Values: Refer to X9 Registry for Check Image Tests (www.X9.org) for allowable variables and defined values for each defined image test. Future releases may add new values to a specific test; however, existing values (and their meaning) shall not be modified, deleted, or have their order changed in the string. Receiving applications shall ignore any additional trailing data values encountered but not expected.

25.10 Test Parameters

The parameters reported by the testing organization for the image test defined by the Image Test Number (Field 2) and Image Test Version (Field 3) of this Record.

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Usage: Conditional
Shall be present if Test Parameters Length (Field 7) of this record is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Test Parameters Length (Field 7) of this record.
Type: ANC Alphanumeric/Comma Delimited (Refer to Annex E for Rules for Using "ANC" Data Type)
Defined Values: Refer to X9 Registry for Check Image Tests (www.X9.org) for allowable variables and defined values for each defined image test. Future releases may add new values to a specific test; however, existing values (and their meaning) shall not be modified, deleted, or have their order changed in the string. Receiving applications shall ignore any additional trailing data values encountered but not expected.

25.11 User Test Data

The user test data reported by the testing organization for the image test defined by the Image Test Number (Field 2) and Image Test Version (Field 3) of this Record. The user test data is known and understood between parties participating in the exchange.

Usage: Conditional
Shall be present if User Test Data Length (Field 8) is greater than zero.
Position: Variable (see table)
Size: Size of this field equals the Defined Value in User Test Data Length (Field 8) of this record.
Type: ANC Alphanumeric/Comma Delimited (Refer to Annex E for Rules for Using "ANC" Data Type)

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26 Credit/Reconciliation Record (Type 61)

The Credit/Reconciliation Record is conditional and contains twelve fields. This Record can occur anywhere in the file after the File Header Record (Type 01) and prior to the File Control Record (Type 99). However, this record cannot be placed between records that establish a single transaction as indicated herein. The record shall not be placed between Check Detail Record (Type 25) and any of its associated addendum records or Return Record (Type 31) and any of its associated addendum records. It shall not be placed prior to the Image View Detail Record that is associated with a Check Detail Record (Type 25) or Return Record (Type 31) or between the Image View Detail Record (Type 50), Image View Data Record (Type 52), Image View Analysis Record (Type 54), Image Test Summary Record (Type 55) and Image Test Detail Record (Type 56). This Record can occur multiple times within a file. The record can occur with or without offsetting Check Detail Record (Type 25) or Return Record (Type 31). If two or more of the User Record (Type 68) Format Type 002, Certificate Record (Type 64) and this Record is immediately following the Cash Letter Header Record (Type 10) or Bundle Header Record Type (20) these records (Type 68, Type 64 and Type 61) shall appear in descending numerical order based on the Record Type number. If both the User Record (Type 68) Format Type 002 and this Record is immediately preceding Bundle Control Record (Type 70) or Cash Letter Control Record (Type 90) these records (Type 68 and Type 61) shall appear in descending numerical order based on the Record Type number. It shall be present only under clearing arrangements. The record can be used for electronic deposits.

There is no restriction that this record shall precede or follow its offsetting entries in the file, nor is there any requirement that these records must equal corresponding debit records. Such rules are established by the exchange parties.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Record Usage Indicator	C	03 – 03	1	AN
3	Auxiliary On-Us	C	04 – 18	15	NBMcd
4	External Processing Code	C	19 – 19	1	NBMc
5	Posting Bank Routing Number	M	20 – 28	9	NBMcd
6	Posting Account Number (On-Us)	C	29 – 48	20	NBMcdo
7	Item Amount	M	49 – 62	14	N
8	Item Sequence Number	M	63 – 77	15	NB
9	Documentation Type Indicator	C	78 – 78	1	AN
10	Type of Account Code	C	79 – 79	1	AN
11	Source of Work Code	C	80 – 81	2	AN
12	Reserved	M	82 – 84	3	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

26.1 Record Type

A code used to identify the type of record.

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Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '61' Credit Record

26.2 Record Usage Indicator

A code used to identify the various debit or credit usages.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 03 – 03
Size: 1
Type: AN Alphanumeric
Defined Values:
'1' Credit for total Cash Letter – Credit precedes Debits. – This record follows the Cash Letter Header Record (Type 10)
'2' Credit for total Cash Letter – Credit follows Debits. – This record precedes the Cash Letter Control Record (Type 90)
'3' Credit for total Bundle – Credit precedes Debits. – This record follows the Bundle Header Record (Type 20)
'4' Credit for total Bundle – Credit follows Debits. – This record precedes the Bundle Control Record (Type 70)
'5' Credit – Items Offsetting - Debits follow. – The debits associated with the credit may cross bundles – This record precedes the first Check Detail Record (Type 25) or Return Record (Type 31) associated with that credit. – This value cannot be used with Defined Value '6' in the same Cash Letter. This supports a deposit and items within the deposit based on the location of this record in the bundle.
'6' Credit – Items Offsetting - Debits preceding – the debits associated with the credit may cross bundles – This record follows the last record associated with the last Check Detail Record (Type 25) or Return Record (Type 31) - This value cannot be used with Defined Value '5' in the same Cash Letter - Use of this Value is not recommended. This supports a deposit and items within the deposit based on the location of this record in the bundle.
'7' Stand Alone Credit
'8' Credit Adjustment
'9' Debit Adjustment

26.3 Auxiliary On-Us

A number used at the discretion of the creating bank. The handling of dashes and spaces shall be determined between the exchange partners.

Usage: Conditional
Shall be present if on the MICR line.
Position: 04 – 18
Size: 15
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash

26.4 External Processing Code

A number used for special purposes as authorized by the Accredited Standards Committee X9. Also known as Position 44.

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Usage: Conditional
Shall be present if on the MICR line.
Position: 19 – 19
Size: 1
Type: NBMc Numeric/Blank/MICR Can't Read

26.5 Posting Bank Routing Number

A number used to identify the institution that originated the item.

Usage: Mandatory
Position: 20 – 28
Size: 9
Type: NBMcd Numeric/Blank/MICR Can't Read and Dash
Format: TTTTAAAAC, where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check Digit
or
TTTTT-FFF, where:
TTTTT Transit Number
FFF Canadian Financial Institution Number

26.6 Posting Account Number (On-Us)

Data specified by the creating bank. On-Us data usually consists of the account number, and a serial number, or transaction code, or both. Other data such as sub accounting may be included. See Annex A for traditional formatting of this field. The handling of dashes and spaces shall be determined between the exchange partners.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 29 – 48
Size: 20
Type: NBMcdo Numeric/Blank/MICR Can't Read, Dash and On-Us

26.7 Item Amount

The dollar value of the transaction that would be placed in an amount field. Default is U.S. dollars unless otherwise agreed within the exchange.

Usage: Mandatory
Position: 49 – 62
Size: 14
Type: N Numeric

26.8 Item Sequence Number

A number assigned by the creator of this Credit /Reconciliation Record (Type 61) used to identify the item.

Usage: Mandatory
Position: 63 – 77
Size: 15
Type: NB Numeric/Blank Fill

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26.9 Documentation Type Indicator

A code used to indicate the type of documentation that supports this record. This field is superseded by the Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) for all Defined Values except 'Z' Not Same Type. In the case of Defined Value of 'Z', the Documentation Type Indicator in this record takes precedent.

Usage: Conditional
Shall be present when Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) is Defined Value of 'Z'.
Position: 78 –78
Size: 1
Type: AN Alphanumeric
Defined Values:
'A' No image provided, paper provided separately
'B' No image provided, paper provided separately, image upon request
'C' Image provided separately, no paper provided
'D' Image provided separately, no paper provided, image upon request
'E' Image and paper provided separately
'F' Image and paper provided separately, image upon request
'G' Image included, no paper provided
'H' Image included, no paper provided, image upon request
'I' Image included, paper provided separately
'J' Image included, paper provided separately, image upon request
'K' No image provided, no paper provided
'L' No image provided, no paper provided, image upon request
'M' No image provided, Electronic Check provided separately

26.10 Type of Account Code

A code that indicates the type of account this Credit Reconciliation Record (Type 61) with which it will be associated.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 79 – 79
Size: 1
Type: AN Alphanumeric
Defined Values:
'1' DDA account
'2' General Ledger account
'3' Savings account
'4' Money Market account
'5' Other account
'A' – 'J' User Defined

26.11 Source of Work Code

A code used to identify the source of the incoming work associated with the Credit Reconciliation Record (Type 61).

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 80 – 81
Size: 2

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Type:	AN	Alphanumeric
Defined Values:	'01'	Internal – ATM
	'02'	Internal – Branch
	'03'	Internal – Other
	'04'	External – Bank to Bank (Correspondent)
	'05'	External – Business to Bank (Customer)
	'06'	External – Business to Bank Remote Capture
	'07'	External – Processor to Bank
	'08'	External – Bank to Processor
	'09'	Lockbox
	'10'	International – Internal
	'11'	International – External
	'21 – 50'	User Defined
	'51 – 99'	Reserved for X9

26.12 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage:	Mandatory	
Position:	82 – 84	
Size:	3	
Type:	AB	All Blank

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27 Digital Certificate Record (Type 64)

The Digital Certificate Record is conditional and contains eight fields. The Digital Certificate Record is used to convey the public keys required to verify digital signatures. If present, it shall contain a X.509 Digital Certificate that contains a digital certificate index comprised of Digital Certificate Issuer Distinguished Name and Digital Certificate Serial Number that shall correlate to a digital certificate index value present in the Digital Certificate Serial Number (Field 25) of the Image View Detail Record (Type 52) for an associated image. Multiple Digital Certificate Records (Type 64) are allowed. The Digital Certificate Record shall follow a File Header Record (Type 01), or a Cash Letter Header Record (Type 10), or a Bundle Header Record (Type 20), or a Digital Certificate Record (Type 64). It shall always appear prior to the first Image View Detail Record (Type 50) that uses this Digital Certificate Record. It is recommended that if multiple Digital Certificate Records are needed, they appear together in the file. If two or more of the User Record (Type 68) Format Type 002, Credit/Reconciliation Record (Type 61) and this Record is immediately following the File Header Record (Type 01) or Cash Letter Header Record (Type 10) or Bundle Header Record Type (20) these records (Type 68, Type 64 and Type 61) shall appear in descending numerical order based on the Record Type number. See Annex M for more information.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Digital Certificate Format	M	03 – 04	2	AN
3	Length of Digital Certificate Issuer Distinguished Name	M	05 – 09	5	N
4	Length of Digital Certificate Serial Number	M	10 – 14	5	N
5	Length of X.509 Digital Certificate	M	15 – 19	5	N
6	Digital Certificate Issuer Distinguished Name	M	20 – (19+X)	Variable (X)	ANS
7	Digital Certificate Serial Number	M	(20+X) – (19+X+Y)	Variable (Y)	ANS
8	X.509 Digital Certificate	M	(20+X+Y) – (19+X+Y+Z)	Variable (Z)	Binary

Note: Fixed length fields that are conditional and are not used shall be filled with Blanks. Variable length fields that are not used (i.e., Size = '0') are omitted.

27.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '64' Digital Certificate Record

27.2 Digital Certificate Format

A code that identifies the format used to convey the Digital Certificate. See Annex M for more information.

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Usage: Mandatory
Position: 03 – 04
Size: 2
Type: AN Alphanumeric
Defined Values: '00' X.509 Certificate DER encoded binary format; Extension: .cer
'01' X.509 PKCS #7 binary format; Extension: .p7b
'02' through '99' Reserved for future use

27.3 Length of Digital Certificate Issuer Distinguished Name

The number of bytes contained in the Digital Certificate Issuer Distinguished Name (Field 6) in this Record.

Usage: Mandatory
Position: 05 – 09
Size: 5
Type: N Numeric
Defined Values: '00000' Digital Certificate Issuer Distinguished Name (Field 6) is not present
'00001 through '99999' Valid when Digital Certificate Issuer Distinguished Name (Field 6) is present.

27.4 Length of Digital Certificate Serial Number

The number of bytes contained in the Digital Certificate Serial Number (Field 7) in this Record.

Usage: Mandatory
Position: 10 – 14
Size: 5
Type: N Numeric
Defined Values: '00000' Digital Certificate Serial Number (Field 7) is not present
'00001 through '99999' Valid when Digital Certificate Serial Number (Field 7) is present.

27.5 Length of X.509 Digital Certificate

The number of bytes contained in the X.509 Digital Certificate (Field 8) in this Record.

Usage: Mandatory
Position: 15 – 19
Size: 5
Type: N Numeric
Defined Values: '00001' through '99999' Valid when X.509 Digital Certificate (Field 8) is present.

27.6 Digital Certificate Issuer Distinguished Name

This field conveys the Digital Certificate Issuer Distinguished Name in the format specified in Digital Certificate Format (Field 2) of this record. The Digital Certificate Issuer Distinguished Name is an X.509 version 3 certificate and contains the public key used to validate image digital signatures.

Usage: Mandatory
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate Issuer Distinguished Name (Field 3) of this record.
Type: ANS Alphanumeric/Special

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27.7 Digital Certificate Serial Number

This field conveys the Digital Certificate Serial Number in the format specified in Digital Certificate Format (Field 2) of this record. The Digital Certificate Serial Number is an X.509 version 3 certificate and contains the public key used to validate image digital signatures.

Usage: Mandatory
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate Serial Number (Field 4) of this record.
Type: ANS Alphanumeric/Special

27.8 X.509 Digital Certificate

This field conveys the Digital Certificate in the binary format specified in Digital Certificate Format (Field 2) of this record. The Digital Certificate is an X.509 version 3 certificate and contains the public key used to validate image digital signatures.

Usage: Mandatory
Position: Variable (see table)
Size: Size of this field equals the Defined Value in Length of Digital Certificate Field 5) of this record.
Type: Binary

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28 User Record (Type 68) – General Format Record

The User Record is conditional, and contains a user controlled number of fields. The record shall be used only under clearing arrangements. This Record can occur anywhere in the file after the File Header Record (Type 01) and prior to the File Control Record (Type 99). This Record can occur multiple times within a file. The exact location of the record shall be determined by the exchange partners.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Owner Identifier Indicator	M	03 – 03	1	AN
3	Owner Identifier	C	04 – 12	9	ANS
4	Owner Identifier Modifier	C	13 – 32	20	ANS
5	User Record Format Type	M	33 – 35	3	AN
6	Format Type Version Level	M	36 – 38	3	N
7	Length of User Data	M	39 – 45	7	N
8	User Data	M	46 – (45+X)	Variable	User Discretion

Note: All fixed length conditional fields that are not used shall be filled with blanks.

28.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '68' User Record

28.2 Owner Identifier Indicator

An indicator to identify the type of number represented in Owner Identifier (Field 3).

Usage: Mandatory
Position: 03 – 03
Size: 1
Type: AN Alphanumeric
Defined Values: '0' Not Used
'1' Routing Number
'2' DUNS Number
'3' Federal Tax Identification Number
'4' X9 Assignment
'5' Other

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28.3 Owner Identifier

A number used by the organization that controls the definition and formatting of this record.

Usage: Conditional
Shall be present if Owner Identifier Indicator (Field 2) is not equal to '0'.
Position: 04 – 12
Size: 9
Type: ANS Alphanumeric/Special
Format: Routing Number formats:
(Applicable when Owner Identifier Indicator (Field 2) has Defined Value = '1'):
TTTTAAAAC where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check digit

or

TTTTT-FFF where:

TTTTT	Canadian Transit Number
FFF	Canadian Financial Institution Number

or

DUNS Number format:
(Applicable when Owner Identifier Indicator (Field 2) has Defined Value = '2'):
XXXXXXXXX where "X" is a numeric value

or

Federal Tax Identification Number format:
(Applicable when Owner Identifier Indicator (Field 2) has Defined Value = '3'):
XXXXXXXXX where "X" is a numeric value
The "dash" in the Federal Tax Identification Number (XX-XXXXXXX) is dropped.

or

X9 Assignment
(Applicable when Owner Identifier Indicator (Field 2) has Defined Value = '4'):
Indicates a Predefined Used Record as defined by X9 within this standard.

or

Other:
(Applicable when Owner Identifier Indicator (Field 2) has Defined Value = '5'):
Any combination of alphanumeric special characters agreed to by the exchange partners.

28.4 Owner Identifier Modifier

This modifier which uniquely identifies the owner within the owning organization.

Usage: Conditional
Shall be present only under clearing agreement.
Position: 13 – 32
Size: 20
Type: ANS Alphanumeric/Special

28.5 User Record Format Type

Uniquely identifies the particular format used to parse and interrogate this record. Provides a means for differentiating different user record data layouts defined by the exchange partners.

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Usage: Mandatory
Position: 33 – 35
Size: 3
Type: AN Alphanumeric

28.6 Format Type Version Level

This code identifies the version of the User Record Format Type (Field 5). Provides a means for identifying different versions of a record layout.

Usage: Mandatory
Position: 36 – 38
Size: 3
Type: N Numeric

28.7 Length of User Data

The number of characters or bytes contained in the User Data (Field 8).

Usage: Mandatory
Position: 39 – 45
Size: 7
Type: N Numeric

28.8 User Data

This field shall be used at the discretion of the owner and exchange partners. The format and structure of this field shall be identified according to Owner Identifier (Field 3), Owner Identifier Modifier (Field 4), User Record Format Type (Field 5) and Format Type Version Level (Field 6).

Usage: Mandatory
Position: Refer to table
Size: Variable
Type: At discretion of User

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29 User Record (Type 68) – Format Type 001 - Payee Endorsement Record

This User Record (Type 68) Format Type 001 is conditional and contains twenty-three fields. This is a predefined User Record (Type 68). If there are any modifications or variations from this format, it is no longer this predefined User Record and a new User Record format shall be created. This record is used to convey payee endorsement information. The record shall be used only under clearing arrangements. This Record when used shall always immediately follow a Check Detail Record (Type 25), or a Return Addendum C Record (Type 33). If additional payee endorsement information is needed, supplemental User Records (Type 68) – General Format can be defined and used by exchange partners in addition to this predefined record.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Owner Identifier Indicator	M	03 – 03	1	AN
3	Owner Identifier	C	04 – 12	9	ANS
4	Owner Identifier Modifier	C	13 – 32	20	ANS
5	User Record Format Type	M	33 – 35	3	AN
6	Format Type Version Level	M	36 – 38	3	N
7	Length of User Data	M	39 – 45	7	N
8	Name of Payee	M	46 – 95	50	ANS
9	Endorsement Date	C	96 – 103	8	NB
10	Bank Routing Number	M	104 – 112	9	NBD
11	Bank Account Number	C	113 – 132	20	ANS
12	Customer Identifier	C	133 – 152	20	ANS
13	Customer Contact Information	C	153 – 202	50	ANS
14	Store/Merchant/Processing Site Number	C	203 – 210	8	ANS
15	Internal Control/Sequence Number	C	211 – 235	25	ANS
16	Time	M	236 – 239	4	N
17	Operator Name/Initials	C	240 – 269	30	ANS
18	Operator Number	C	270 – 274	5	ANS
19	Manager/Supervisor Name/Initials	C	275 – 304	30	ANS
20	Manager/Supervisor Number	C	305 – 309	5	ANS
21	Equipment Number	C	310 – 324	15	ANS
22	Endorsement Indicator	C	325 – 325	1	AN
23	User Field	C	326 – 335	10	ANS

Note: All fixed length conditional fields that are not used shall be filled with blanks.

29.1 Record Type

A code used to identify the type of record.

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Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '68' User Record

29.2 Owner Identifier Indicator

An indicator to identify the type of number represented in Owner Identifier (Field 3).

Usage: Mandatory
Position: 03 – 03
Size: 1
Type: AN Alphanumeric
Defined Values: '4' X9 Assignment

29.3 Owner Identifier

A number used by the organization that controls the definition and formatting of this record.

Usage: Conditional
Shall be present if Owner Identifier Indicator (Field 2) is not equal to '0'.
Position: 04 – 12
Size: 9
Type: ANS Alphanumeric/Special
Defined Values: '000000001' (X9B Subcommittee)

29.4 Owner Identifier Modifier

This modifier which uniquely identifies the owner within the owning organization.

Usage: Conditional
Shall be present only under clearing agreement.
Position: 13 – 32
Size: 20
Type: ANS Alphanumeric/Special
Defined Values: '100-180'

29.5 User Record Format Type

Uniquely identifies the particular format used to parse and interrogate this record. Provides a means for differentiating different user record data layouts defined by the exchange partners.

Usage: Mandatory
Position: 33 – 35
Size: 3
Type: AN Alphanumeric
Defined Values: '001' (Payee Endorsement)

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29.6 Format Type Version Level

This code is used to identify the version of the User Data Format Type (Field 5). Provides a means for identifying different versions of a record layout.

Usage: Mandatory
Position: 36 – 38
Size: 3
Type: N Numeric
Defined Values: '001'

29.7 Length of User Data

The number of characters or bytes contained in the User Data (Fields 8 – 23).

Usage: Mandatory
Position: 39 – 45
Size: 7
Type: N Numeric
Defined Values' '0000290'

29.8 Name of Payee

The payee name to which the check is written.

Usage: Mandatory
Position: 46 – 95
Size: 50
Type: ANS Alphanumeric/Special

29.9 Endorsement Date

The year, month and day of the endorsement. The default date shall be based on GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 96 – 103
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:
YYYY year
MM month
DD day
Defined Values: YYYY '1993' through '9999'
MM '01' through '12'
DD '01' through '31'

29.10 Bank Routing Number

A number that identifies the institution or the organization who endorsed this check.

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Usage: Mandatory
Position: 104 – 112
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC where:

TTTT	Federal Reserve Prefix
AAAA	ABA Institution Identifier
C	Check digit

or

TTTTT-FFF where:

TTTTT	Canadian Transit Number
FFF	Canadian Financial Institution Number

29.11 Bank Account Number

Bank Account Number of the endorsing organization. The handling of dashes and spaces shall be determined between the exchange partners.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 113 – 132
Size: 20
Type: ANS Alphanumeric/Special

29.12 Customer Identifier

A number or code identifying the customer of the endorser (check drawer) (e.g., driver's license number or shopper number, etc.).

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 133 – 152
Size: 20
Type: ANS Alphanumeric/Special

29.13 Customer Contact Information

Customer contact information (e.g., phone number, e-mail, addresses, etc.). Unique field data shall be separated by commas.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 153 – 202
Size: 50
Type: ANS Alphanumeric/Special

29.14 Store/Merchant/Processing Site Number

A number or code identifying the merchant, store or processing site.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 203 – 210

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Size: 8
Type: ANS Alphanumeric/Special

29.15 Internal Control/Sequence Number

A number or code defined by the customer for audit proposes (i.e., this can include item sequence, pocket, pass information).

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 211 – 235
Size: 25
Type: ANS Alphanumeric/Special

29.16 Time

The time associated with this transaction. The default time shall be GMT. The local time zone or a specific time zone may be used under clearing arrangements.

Usage: Mandatory
Position: 236 – 239
Size: 4
Type: N Numeric
Format: hhmm, where:
hh hour
mm minute
Defined Values: hh '00' through '23'
mm '00' through '59'

29.17 Operator Name/Initials

The name or initials of the operator or clerk processing the item.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 240 – 269
Size: 30
Type: ANS Alphanumeric/Special

29.18 Operator Number

A number or code identifying the operator or clerk processing the item.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 270 – 274
Size: 5
Type: ANS Alphanumeric/Special

29.19 Manager/Supervisor Name/Initials

The name or initials of the manager or supervisor approving the transaction.

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Usage: Conditional
Shall be present only under clearing arrangements.
Position: 275 – 304
Size: 30
Type: ANS Alphanumeric/Special

29.20 Manager/Supervisor Number

A number or code identifying the manager or supervisor approving the transaction.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 305 – 309
Size: 5
Type: ANS Alphanumeric/Special

29.21 Equipment Number

A number or code of the equipment/system used to process this transaction.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 310 – 324
Size: 15
Type: ANS Alphanumeric/Special

29.22 Endorsement Indicator

An indicator to identify the type of electronic payee endorsement associated with this transaction.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 325 – 325
Size: 1
Type: AN Numeric
Defined Values:
‘0’ Endorsed in Blank – Instrument becomes payable to bearer
‘1’ For Deposit Only
‘2’ For Collection Only
‘3’ Anomalous Endorsement – Endorsement made by person who is not holder of instrument
‘4’ Restrictive Endorsement – Limiting to a particular person or situation
‘5’ Guaranteed Endorsement – Deposit to the account of within named payee absent of endorsement guaranteed by the bank who’s Routing Number appears in Bank Routing Number (Field 10)
‘9’ Other

29.23 User Field

A field used at the discretion of users of this record.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 326 – 335

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Size: 10
Type: ANS Alphanumeric/Special

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30 User Record (Type 68) - Format Type 002 – Destination Record

This User Record (Type 68) Format Type 002 is conditional, and contains thirteen fields. It is a predefined User Record (Type 68). If there are any modifications or variations from this format, it is no longer this predefined User Record and a new User Record format shall be created. The Destination User record can be used to provide additional information on where a Cash Letter or a Bundle should be delivered. This Record can occur after the File Header Record (Type 01) for file level destination or Cash Letter Header Record (Type 10) for cash letter level destination or Bundle Header Record (Type 20) for bundle level destination. It can precede the Bundle Control Record (Type 70) for bundle level destination or Cash Letter Control Record (Type 90) for cash level destination or File Control Record (Type 99) for file level destination. If two or more of the Digital Certificate Record (Type 64), Credit/Reconciliation (Type 61) and this Record is immediately following the Cash Letter Header Record (Type 10) or Bundle Header Record Type (20) these records (Type 68, Type 64 and Type 61) shall appear in descending numerical order based on the Record Type number. If both the Credit/Reconciliation Record (Type 61) and this Record is immediately preceding Bundle Control Record (Type 70) or Cash Letter Control Record (Type 90) these records (Type 68 and Type 61) shall appear in descending numerical order based on the Record Type number. The Record can occur multiple times within a file. However, if it is used at the bundle level, it shall not be used at the cash letter or file level. If it is used at the cash letter level, it shall not be used at the file level or bundle level. If it is used at the file level, it shall not be used at the cash letter or bundle level.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Owner Identifier Indicator	M	03 – 03	1	AN
3	Owner Identifier	C	04 – 12	9	ANS
4	Owner Identifier Modifier	C	13 – 32	20	ANS
5	User Record Format Type	M	33 – 35	3	AN
6	Format Type Version Level	M	36 – 38	3	N
7	Length of User Data	M	39 – 45	7	N
8	Destination Name	M	46 – 75	30	ANS
9	Destination Address Field 1	C	76 – 95	20	ANS
10	Destination Address Field 2	C	96 – 115	20	ANS
11	Destination Address Field 3	C	116 – 135	20	ANS
12	Zip Code	C	136 – 145	10	NBD
13	User Field	C	146 – 155	10	ANS

Note: All fixed length conditional fields that are not used shall be filled with blanks.

30.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2

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Type: N Numeric
Defined Values: '68' User Record

30.2 Owner Identifier Indicator

An indicator to identify the type of number represented in Owner Identifier (Field 3).

Usage: Mandatory
Position: 03 – 03
Size: 1
Type: AN Alphanumeric
Defined Values: '4' X9 Assignment

30.3 Owner Identifier

The number of the organization that controls the definition and formatting of this record.

Usage: Conditional
Shall be present if Owner Identifier Indicator (Field 2) is not equal to '0'.
Position: 04 – 12
Size: 9
Type: ANS Alphanumeric/Special
Defined Values: '000000001' (X9B Subcommittee)

30.4 Owner Identifier Modifier

This modifier which uniquely identifies the owner within the owning organization.

Usage: Conditional
Shall be present only under clearing agreement.
Position: 13 – 32
Size: 20
Type: ANS Alphanumeric/Special
Defined Values: '100-180'

30.5 User Record Format Type

Uniquely identifies the particular format used to parse and interrogate this record. Provides a means for differentiating different user record data layouts defined by the exchange partners.

Usage: Mandatory
Position: 33 – 35
Size: 3
Type: AN Alphanumeric
Defined Values: '002' (Destination Record)

30.6 Format Type Version Level

This code is used to identify the version of the User Data Format Type (Field 5). Provides a means for identifying different versions of a record layout.

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Usage: Mandatory
Position: 36 – 38
Size: 3
Type: N Numeric
Defined Values: '001'

30.7 Length of User Data

The number of characters or bytes contained in User Data (Fields 8 – 13).

Usage: Mandatory
Position: 39 – 45
Size: 7
Type: N Numeric
Defined Value: '00000110'

30.8 Destination Name

The name of the final or intermediary institution.

Usage: Mandatory
Position: 46 – 75
Size: 30
Type: ANS Alphanumeric/Special

30.9 Destination Address Field 1

First address line. This is a free form field. This is typically street or P.O Box.

Usage: Conditional
Position: 76 – 95
Size: 20
Type: ANS Alphanumeric/Special

30.10 Destination Address Field 2

Second address line. This is a free form field. This is optional for Suite or c/o or mail code.

Usage: Conditional
Position: 96 – 115
Size: 20
Type: ANS Alphanumeric/Special

30.11 Destination Address Field 3

Third address line. This is a free form field. This is typically the city and state.

Usage: Conditional
Position: 116 – 135
Size: 20
Type: ANS Alphanumeric/Special

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30.12 Zip Code

Zip Code of destination.

Usage: Conditional
Position: 136 – 145
Size: 10
Type: NBD Numeric/Blank Fill/Dash

30.13 User Field

A field used at the discretion of users of this record.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 146 – 155
Size: 10
Type: ANS Alphanumeric/Special

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31 Bundle Control Record (Type 70)

The Bundle Control Record is conditional and contains nine fields. It shall be present to complete a bundle that began with a Bundle Header Record (Type 20). There shall be one Bundle Control Record corresponding to each Bundle Header Record (Type 20). It shall be the last record of the bundle. This record shall always follow one of the following records: Check Detail Record (Type 25), or Check Detail Addendum A Record (Type 26), or Check Detail Addendum B Record (Type 27), or Check Detail Addendum C Record (Type 28), or Return Addendum B Record (Type 33), or Return Addendum C Record (Type 34), or Return Addendum D Record (Type 35), or Image View Data Record (Type 52), or Image View Analysis Record (Type 54), or Image Test Detail Record (Type 56), or Credit/Reconciliation Record (Type 61), or User Record (Type 68) Format Type 001 or User Record (Type 68) Format Type 002. If both the User Record (Type 68) Format Type 002 and Credit/Reconciliation Record (Type 61) is immediately preceding this record they shall appear in descending numerical order based on the Record Type number. The data in the fields are generated by the ECE institution that created the corresponding Bundle Header Record.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Bundle Debit Item Count	M	03 – 06	4	N
3	Bundle Debit Total Amount	M	07 – 18	12	N
4	MICR Valid Debit Total Amount	C	19 – 30	12	NB
5	Bundle Image View Record Count	M	31 – 35	5	N
6	Bundle Credit Item Count	M	36 – 39	4	N
7	Bundle Credit Total Amount	M	40 – 51	12	N
8	User Field	C	52 – 60	9	ANS
9	Reserved	M	61 – 80	20	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

31.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '70' Bundle Control Record

31.2 Bundle Debit Item Count

The total number of debit items sent within a bundle. Debit items include: all Check Detail Records (Type 25), all Return Records (Type 31) and all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) Defined Value of '9'.

Usage: Mandatory
Position: 03 – 06

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Size: 4
Type: N Numeric

31.3 Bundle Debit Total Amount

The amount sum value of the debit items within the bundle. Debit items include: all Check Detail Records (Type 25), all Return Records (Type 31) and all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) Defined Value of '9'.

Usage: Mandatory
Position: 07 – 18
Size: 12
Type: N Numeric

31.4 MICR Valid Debit Total Amount

The amount sum value of all Check Detail Records (Type 25) that contain the Defined Value '1' in the MICR Valid Indicator (Field 10).

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 19 – 30
Size: 12
Type: NB Numeric/Blank Fill

31.5 Bundle Image View Record Count

The total number of image view record pairs within a bundle regardless of whether image data is actually present. Each image view is represented by an Image View Detail Record (Type 50) and an Image View Data Record (Type 52) pair.

Usage: Mandatory
Position: 31 – 35
Size: 5
Type: N Numeric

31.6 Bundle Credit Item Count

The total number of credit items sent within a bundle. Credit items include: all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having Defined Values other than '9'.

Usage: Mandatory
Position: 36 – 39
Size: 4
Type: N Numeric

31.7 Bundle Credit Total Amount

The amount sum value of the credit items within the bundle. Credit items include: all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having Defined Values other than '9' .

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Usage: Mandatory
Position: 40 – 51
Size: 12
Type: N Numeric

31.8 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 52 – 60
Size: 9
Type: ANS Alphanumeric/Special

31.9 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 61 – 80
Size: 20
Type: AB All Blank

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32 Box Summary Record (Type 75)

The Box Summary Record is conditional and contains eight fields. It shall be present only under clearing arrangements. If present, it shall always follow a Bundle Control Record (Type 70). It is generated by the ECE institution and contains data related to box processing. There shall be one Box Summary Record per box (box of bundles). Cash letters that have Box Summary Records and those that do not may be commingled within a single file.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Destination Routing Number	M	03 – 11	9	NBD
3	Box Sequence Number	M	12 – 14	3	N
4	Box Bundle Count	M	15 – 18	4	N
5	Box Number ID	M	19 – 26	8	N
6	Box Debit Total Amount	M	27 – 40	14	N
7	Box Credit Total Amount	M	41 – 54	14	N
8	Reserved	M	55 – 80	26	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

32.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '75' Box Summary Record

32.2 Destination Routing Number

A number used to identify the institution that receives and processes the cash letter or the bundle.

Usage: Mandatory
Position: 03 – 11
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check digit
or
TTTTT-FFF where:
TTTTT Canadian Transit Number
FFF Canadian Financial Institution Number

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32.3 Box Sequence Number

A number assigned by the institution that creates the box. Usually denotes the relative position of the box within the cash letter.

Usage: Mandatory
Position: 12 – 14
Size: 3
Type: N Numeric

32.4 Box Bundle Count

A number indicating the total number of bundles in the box.

Usage: Mandatory
Position: 15 – 18
Size: 4
Type: N Numeric

32.5 Box Number ID

A code that identifies the box number assigned by the institution that creates the box.

Usage: Mandatory
Position: 19 – 26
Size: 8
Type: N Numeric

32.6 Box Debit Total Amount

The amount sum value of the debit items within the bundles in the box. Debit items include: all Check Detail Records (Type 25), all Return Records (Type 31), and all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) of Defined Value of '9'.

Usage: Mandatory
Position: 27 – 40
Size: 14
Type: N Numeric

32.7 Box Credit Total Amount

The amount sum value of the credit items within the bundles in the box. This includes all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having Defined Values other than '9'.

Usage: Mandatory
Position: 41 – 54
Size: 14
Type: N Numeric

32.8 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

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Usage: Mandatory
Position: 55 – 80
Size: 26
Type: AB All Blank

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33 Routing Number Summary Record (Type 85)

The Routing Number Summary Record is conditional and contains seven fields. It shall be present only under clearing arrangements. If present, it shall follow a Bundle Control Record (Type 70), or a Box Summary Record (Type 75), or another Routing Number Summary Record (Type 85), if present. When used, there is one record for each payor bank Routing Number represented in the cash letter. The data is generated by the ECE institution.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Routing Number Within Cash Letter	M	03 – 11	9	NBD
3	Routing Number Debit Total Amount	M	12 – 25	14	N
4	Routing Number Item Count	M	26 – 31	6	N
5	Routing Number Credit Total Amount	M	32 – 45	14	N
6	User Field	C	46 – 55	10	ANS
7	Reserved	M	56 – 80	25	AB

Note: All fixed length conditional fields that are not used shall be filled with blanks.

33.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '85' Routing Number Summary Record

33.2 Routing Number Within Cash Letter

A number that identifies a given payor bank within a cash letter. A cash letter may contain more than one payor bank.

Usage: Mandatory
Position: 03 – 11
Size: 9
Type: NBD Numeric/Blank Fill/Dash
Format: TTTTAAAAC where:
TTTT Federal Reserve Prefix
AAAA ABA Institution Identifier
C Check digit
or
TTTTT-FFF where:
TTTTT Canadian Transit Number
FFF Canadian Financial Institution Number

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33.3 Routing Number Debit Total Amount

The amount sum value for all the debit items in a cash letter. Debit items include all Check Detail Records (Type 25), or Return Records (Type 31), or Credit/Reconciliation Records with Record Usage Indicator (Field 2) with Defined Value of '9' associated with the Payor bank routing number designated in the Routing Number Within Cash Letter (Field 2) in this record.

Usage: Mandatory
Position: 12 – 25
Size: 14
Type: N Numeric

33.4 Routing Number Item Count

The total number of all Check Detail Records (Type 25), or Return Records (Type 31), or Credit/Reconciliation Records (Type 61) associated with the payor bank routing number designated in the Routing Number Within Cash Letter (Field 2) within this record.

Usage: Mandatory
Position: 26 – 31
Size: 6
Type: N Numeric

33.5 Routing Number Credit Total Amount

The amount sum value for all credit items in a cash letter. Credit items include all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having all Defined Values other than '9' associated with the Payor bank routing number designated in the Routing Number Within Cash Letter (Field 2) in this record.

Usage: Mandatory
Position: 32 – 45
Size: 14
Type: N Numeric

33.6 User Field

A field used at the discretion of users of the standard.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 46 – 55
Size: 10
Type: ANS Alphanumeric/Special

33.7 Reserved

A field reserved for future use by the Accredited Standards Committee X9.

Usage: Mandatory
Position: 56 – 80
Size: 25
Type: AB All Blank

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34 Cash Letter Control Record (Type 90)

The Cash Letter Control Record is mandatory and contains nine fields. There must be one Cash Letter Control Record corresponding to each Cash Letter Header Record (Type 10), and it shall be the last record in the cash letter. It shall always follow a Bundle Control Record (Type 70), or a Box Summary Record (Type 75), or a Routing Number Summary Record (Type 85), or Credit/Reconciliation Record (Type 61), or User Record (Type 68) Format Type 002, if present. If both the User Record (Type 68) Format Type 002 and Credit/Reconciliation Record (Type 61) is immediately preceding this record they shall appear in descending numerical order based on the Record Type number. The data in the fields are generated by the ECE institution that created the corresponding Cash Letter Header Record.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Bundle Count	M	03 – 08	6	N
3	Cash Letter Debit Item Count	M	09 – 16	8	N
4	Cash Letter Debit Total Amount	M	17 – 30	14	N
5	Cash Letter Image View Record Count	M	31 – 39	9	N
6	ECE Institution Name	C	40 – 55	16	ANS
7	Settlement Date	C	56 – 63	8	NB
8	Cash Letter Credit Item Count	M	64 – 71	8	N
9	Cash Letter Credit Total Amount	M	72 – 85	14	N

Note: All fixed length conditional fields that are not used shall be filled with blanks.

34.1 Record Type

A code used to identify the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '90' Cash Letter Control Record

34.2 Bundle Count

The number used to indicate the total number of bundles within the cash letter.

Usage: Mandatory
Position: 03 – 08
Size: 6
Type: N Numeric

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34.3 Cash Letter Debit Item Count

The total number of debit items sent within a cash letter. Debit items include: all Check Detail Records (Type 25), all Return Records (Type 31) and all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) with Defined Value of '9'.

Usage: Mandatory
Position: 09 – 16
Size: 8
Type: N Numeric

34.4 Cash Letter Debit Total Amount

The amount sum value of the debit items within the cash letter. Debit items include: all Check Detail Records (Type 25), all Return Records (Type 31) and all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) with Defined Value of '9'.

Usage: Mandatory
Position: 17 – 30
Size: 14
Type: N Numeric

34.5 Cash Letter Image View Record Count

The total number of image view record pairs within a cash letter regardless of whether image data is actually present. Each image is represented by an Image View Detail Record (Type 50) and an Image View Data Record (Type 52) pair.

Usage: Mandatory
Position: 31 – 39
Size: 9
Type: N Numeric

34.6 ECE Institution Name

The short name used to identify the institution that creates the Cash Letter Control Record (Type 90).

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 40 – 55
Size: 16
Type: ANS Alphanumeric/Special

34.7 Settlement Date

The year, month and day that the institution creating the cash letter expects settlement to occur.

Usage: Conditional
Shall be present only under clearing arrangements.
Position: 56 – 63
Size: 8
Type: NB Numeric/Blank Fill
Format: YYYYMMDD, where:

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	YYYY	year
	MM	month
	DD	day
Defined Values:	YYYY	'1993' through '9999'
	MM	'01' through '12'
	DD	'01' through '31'

34.8 Cash Letter Credit Item Count

The total number of credit items sent within a Cash Letter. Credit items include: all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having all Defined Values other than '9' .

Usage:	Mandatory	
Position:	64 – 71	
Size:	8	
Type:	N	Numeric

34.9 Cash Letter Credit Total Amount

The amount sum value of the credit items within the Cash Letter. Credit items include: all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having all Defined Values other than '9'.

Usage:	Mandatory	
Position:	72 – 85	
Size:	14	
Type:	N	Numeric

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35 File Control Record (Type 99)

The File Control Record is mandatory and contains eight fields. It is the final record in the file. It shall always follow a Cash Letter Control Record (Type 90), or Credit Reconciliation Record (Type 61), or User Record (Type 68) Format Type 002, if present. If both the User Record (Type 68) Format Type 002 and Credit/Reconciliation Record (Type 61) is immediately preceding this record they shall appear in descending numerical order based on the Record Type number. The data in the fields are created by the institution sending the file, the immediate origin institution.

Each record in the file is variable length and shall be preceded by a four (4) byte length field known as the Inserted Length Field, which is not represented in this record layout. See Annex D for more information.

FIELD	FIELD NAME	USAGE	POSITION	SIZE	TYPE
1	Record Type	M	01 – 02	2	N
2	Cash Letter Count	M	03 – 08	6	N
3	Total Record Count	M	09 – 16	8	N
4	Total Item Count	M	17 – 24	8	N
5	File Debit Total Amount	M	25 – 40	16	N
6	Immediate Origin Contact Name	C	41 – 54	14	ANS
7	Immediate Origin Contact Phone Number	C	55 – 64	10	NB
8	File Credit Total Amount	M	65 – 80	16	N

Note: All fixed length conditional fields that are not used shall be filled with blanks.

35.1 Record Type

A code that identifies the type of record.

Usage: Mandatory
Position: 01 – 02
Size: 2
Type: N Numeric
Defined Values: '99' File Control Record

35.2 Cash Letter Count

The total number of cash letters within the file. This represents the total pairs of the Cash Letter Header Record (Type 10) and its associated Cash Letter Control Record (Type 90).

Usage: Mandatory
Position: 03 – 08
Size: 6
Type: N Numeric

35.3 Total Record Count

The total number of records of all types sent in the file, including the File Header Record (Type 01) and File Control Record.

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Usage: Mandatory
Position: 09 – 16
Size: 8
Type: N Numeric

35.4 Total Item Count

The total number of items sent within the file, all Check Detail Records (Type 25), all Return Records (Type 31) and all Credit/Reconciliation Records (Type 61).

Usage: Mandatory
Position: 17 – 24
Size: 8
Type: N Numeric

35.5 File Debit Total Amount

The amount sum value of all debit items in the file that includes all Check Detail Records (Type 25), all Return Records (Type 31) and Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) with Defined Value of '9'.

Usage: Mandatory
Position: 25 – 40
Size: 16
Type: N Numeric

35.6 Immediate Origin Contact Name

A name indicating a contact at the institution that creates the ECE file.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 41 – 54
Size: 14
Type: ANS Alphanumeric/Special

35.7 Immediate Origin Contact Phone Number

The phone number of the contact name at the institution that creates the file.

Usage: Conditional
Shall be present unless omitted under clearing arrangements.
Position: 55 – 64
Size: 10
Type: NB Numeric/Blank Fill

35.8 File Credit Total Amount

The amount sum value of all credit items in the file which includes all Credit/Reconciliation Records (Type 61) with Record Usage Indicator (Field 2) having all Defined Values other than '9'.

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Usage: Mandatory
Position: 65 – 80
Size: 16
Type: N Numeric

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Annex A
(Normative)
Standard On-Us Field Format

A.1 ANS X9.100-160-1 Definition of the On-Us field

The structure and use of the Standard On-Us Field Format is mandated by the structure and use of the On-Us field in ANS X9.100-160-1[1] on the MICR line of a check. Under that standard, the On-Us field is located "between the Amount and Routing fields in positions 13 through 32," and "defines the boundaries within which On-Us data may appear (typically the Account Number, and optionally, a serial number and/or transaction code)."

ANS X9.100-160-1 imposes additional requirements on the structure and contents of the field. It does require that the On-Us Symbol always appears to the right of the Account Number. It allows one additional On-Us Symbol in the On-Us Field to create an optional data area typically used for serial numbers. The dash symbol may be used as a separator in the On-Us field; however, the ANS X9.100-160-1 standard recommends that issuing institutions consider the use of blank spaces to serve the same purpose. It is preferable to leave the position blank, thereby eliminating any possibility of a reader/sorter failure to recognize the dash symbol. The maximum number of printable positions allowed in the field is 19. An additional blank tolerance position is provided between pre-encoded and post-encoded elements of the MICR line. See ANS X9.100-160-1 for additional detail and examples.

A.2 Standard On-Us Field Format

Prior to the development of Electronic Exchange, collecting banks were required only to capture the dollar amount and routing number from the paying bank's check if edit errors were encountered in the On-Us field of a transit check. Therefore, collecting banks typically read transit checks utilizing the same logic used in reading their On-Us checks, recognizing fields pertinent to their own internal systems and ignoring other data. In some Electronic Exchange situations a paying bank needs to receive their full MICR line to process the transaction; therefore omitting certain fields can cause problems for the receiving bank.

Because ANS X9.100-160-1 allows paying banks flexibility in the design of the On-Us Field on their physical checks, its structure can vary from bank to bank. Since this field is not uniformly structured by all banks, paying banks cannot easily communicate their On-Us structure to all collecting banks. Without knowing each paying bank's On-Us Field structure, the collecting bank cannot always interpret the On-Us Field accurately in order to place discrete data elements from the On-Us Field of the physical document into corresponding discrete fields such as account number, serial number and transaction codes.

In order to accommodate the flexibility allowed in ANS X9.100-160-1, ANS X9.100-180 requires that the collecting bank capture the entire On-Us Field from the physical check. The collecting bank must be able to place the On-Us Field from the physical check into the On-Us Field of the file intact and in the same sequence as it appears on the physical check. Each On-Us Symbol shall be translated to a forward slash ('/') in the On-Us Fields (Field 5) of the Check Detail Record (Type 25) and Return Record (Type 31) and Posting Account Number (On-Us) (Field 6) of the Credit/Reconciliation Record (Type 61). Without agreement, spaces shall be eliminated and dashes shall be included if present. With exchange agreements, users of this standard shall dictate the inclusion or omission of dashes and spaces.

Note 1: ANS X9.100-160-1-2004 (X9.13), *Part 1: Placement and Location of Magnetic Ink Printing (MICR).*

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Annex B
(Normative)
Relationship of Cash Letter Record Type Indicator and Cash Letter Documentation Type Indicator

B.1 General Comments

The interrelationship of these two identified fields is important, in order for the receiver to understand the nature of the file and the documentation that may be either included in the file or provided separately. Some codes only apply for certain combinations of the Cash Letter Documentation Type Indicator and the Cash Letter Record Type Indicator. Below is a chart identifying the valid code usage.

B.2 Definitions from Cash Letter Header Record (Type 10)

The Cash Letter Record Type Indicator (Field 8) in the Cash Letter Header Record (Type 10) is defined as a code that indicates the presence of records, or the type of records contained in the cash letter. The Cash Letter Documentation Type Indicator (Field 9) in the Cash Letter Header Record (Type 10) is defined as a code that indicates the type of documentation that supports all check records in the cash letter. This code indicates whether or not the items contained in the cash letter are the same type. Cash Letter Documentation Type Indicator (Field 9) supersedes the Documentation Type Indicator (Field 8) in the Check Detail Record (Type 25) or the Return Documentation Type Indicator (Field 6) in the Return Addendum B Record (Type 33) or Documentation Type Indicator (Field 9) in the Credit/Reconciliation Record for all Defined Values except ‘Z’ Not Same Type, in which case the Documentation Type Indicator (Field 8) in the Check Detail Record (Type 25) or the Return Documentation Type Indicator (Field 6) in the Return Addendum B Record (Type 33) or Documentation Type Indicator (Field 9) in the Credit/Reconciliation Record takes precedent.

The following chart applies when the Collection Type Indicator (Field 2) in the Cash Letter Header Record (Type 10) is equal to ‘01’ or ‘03’ or ‘07’.

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	Field 8 – Cash Letter Record Type Indicator			
Field 9 – Cash Letter Documentation Type Indicator (or Documentation Type Indicator (Clause 10.8) or Return Documentation Type Indictor (Clause 16.6) or Documentation Type Indicator (Clause 26.9))	'N' – No electronic check records or image records (Type 2x's, 3x's, 5x's); e.g., Account Totals only or an empty cash letter.	'E' – Cash letter contains electronic check records with no images (Type 2x's and 3x's only).	'I' – Cash letter contains electronic check records (Type 2x's, 3x's) and image records (Type 5x's).	'F' – Cash letter contains electronic check records (Type 2x's and 3x's) and image records (Type 5x's) that correspond to a previously sent cash letter (i.e., 'E' file). [See Clause 8.8 for further explanation]
'A' – No image provided, paper provided separately	No	Yes	No	No
'B' – No image provided, paper provided separately, image upon request	No	Yes	No	No
'C' – Image provided separately, no paper provided	No	Yes	No	No
'D' – Image provided separately no paper provided, image upon request	No	Yes	No	No
'E'- Image and paper provided separately	No	Yes	No	No
'F' – Image and paper provided separately, image upon request	No	Yes	No	No
'G' – Image included, no paper provided	No	No	Yes	Yes
'H' – Image included, no paper provided, image upon request	No	No	Yes	Yes

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	Field 8 – Cash Letter Record Type Indicator			
Field 9 – Cash Letter Documentation Type Indicator (or Documentation Type Indicator (Clause 10.8) or Return Documentation Type Indictor (Clause 16.6) or Documentation Type Indicator (Clause 26.9))	'N' – No electronic check records or image records (Type 2x's, 3x's, 5x's); e.g., Account Totals only or an empty cash letter.	'E' – Cash letter contains electronic check records with no images (Type 2x's and 3x's only).	'I' – Cash letter contains electronic check records (Type 2x's, 3x's) and image records (Type 5x's).	'F' – Cash letter contains electronic check records (Type 2x's and 3x's) and image records (Type 5x's) that correspond to a previously sent cash letter (i.e., 'E' file). [See Clause 8.8 for further explanation]
'I' – Image included, paper provided separately	No	No	Yes	Yes
'J' – Image included, paper provided separately, image upon request	No	No	Yes	Yes
'K' – No image provided, no paper provided	No	Yes	No	No
'L' – No image provided, no paper provided, image upon request	No	Yes	No	No
'M' – No image provided, Electronic Check provided separately	No	Yes	No	No
'Z' – Not the Same Type	N/A	Yes	Yes	Yes

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Annex C
(Normative)
Image Record Definition for Image View Not Present

C.1 Image Record Field Values for Image View Not Present

When the Image Indicator (Field 2) in the Image View Detail Record (Type 50) has Defined Value = '0', the fields in the Image View Detail Record (Type 50) and Image View Data Record (Type 52) records shall have values as defined in this Annex. This Annex describes the appropriate values to indicate the specific image view that is not present.

C.1.1 Image View Detail Record (Type 50) Field Values for Image View Not Present Condition

FIELD	FIELD NAME	USAGE	SIZE	VALUE	TYPE
1	Record Type	M	2	'50'	N
2	Image Indicator	M	1	'0'	AN
3	Image Creator Routing Number	M	9	TTTTAAAAC TTTTT-FFF NNNNNNNNN (ref Clause 21.3)	NBD
4	Image Creator Date	M	8	YYYYMMDD (ref Clause 21.4)	N
5	Image View Format Indicator	M	2	Blanks	AN
6	Image View Compression Algorithm Identifier	M	2	Blanks	AN
7	Image View Type	M	1	'0', '1', '2' , '3', or '4'	AN
8	View Side Indicator	M	1	'0' or '1'	AN
9	View Descriptor	M	2	'00' through '99'	AN
10	Digital Signature Indicator	M	1	'0'	AN
11	Digital Signature Hash Function Method	C	2	Blanks	AN
12	Digital Signature Cryptographic Algorithm Method	C	2	Blanks	AN
13	DSA/RSA Key Size or ECC Curve Number	C	10	Blanks	ANS
14	Digital Certificate Indicator	M	1	'0'	AN
15	Digital Certificate Format	C	2	Blanks	AN
16	Digital Certificate Conveyance Method	C	2	Blanks	AN
17	Start of Protected Data	M	7	'0000000'	N
18	Length of Protected Data	M	7	'0000000'	N
19	Image Recreate Indicator	C	1	Blank	AN
20	Image Test Override Indicator	C	1	'0'	AN
21	Image Creator Time	C	6	Blanks	NB
22	User Field	C	6	User defined	ANS
23	Reserved	M	4	Blanks	AB

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C.1.2 Image View Data Record (Type 52) Field Values for Image View Not Present Condition

FIELD	FIELD NAME	USAGE	SIZE	VALUE	TYPE
1	Record Type	M	2	'52'	N
	Item Reference Key				
2	ECE Institution Routing Number	M	9	ECE Institution Routing Number (see clause 22.2)	NBD
3	Bundle Business Date	M	8	Bundle Business Date (see clause 22.3)	N
4	Cycle Number	C	2	Cycle Number (see clause 22.4)	AN
5	ECE Institution Item Sequence Number	M	15	ECE Institution Item Sequence Number (see clause 22.5)	NB
	Additional Security Information				
6	Security Originator Name	C	16	Blanks	ANS
7	Security Authenticator Name	C	16	Blanks	ANS
8	Security Key Name	C	16	Blanks	ANS
	Clipping Information				
9	Clipping Origin	M	1	'0'	AN
10	Clipping Coordinate h1	M	4	'0000'	N
11	Clipping Coordinate h2	M	4	'0000'	N
12	Clipping Coordinate v1	M	4	'0000'	N
13	Clipping Coordinate v2	M	4	'0000'	N
	Ancillary Data Information				
14	Ancillary Data Indicator	M	2	'00'	N
	Length Information				
15	Length of Image Reference Key	M	4	'0000'	N
16	Length of Digital Signature	M	5	'00000'	N
17	Length of Digital Certificate Issuer Distinguished Name	M	5	'00000'	N
18	Length of Digital Certificate Serial Number	M	5	'00000'	N
19	Length of Digital Certificate	M	5	'00000'	N
20	Length of Image Data	M	7	'0000000'	N
21	Length of Ancillary Data	M	5	'00000'	N

Notes:
Fields 22, 23, 24, 25, 26, 27 and 28 are omitted.
Length of Image View Data Record (Field 1 – 21) for this instance = 139 characters

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Annex D
(Normative)
Variable Length Record File

D.1 Background on Variable Length Record

The early versions of X9.100-180 (formerly published as ANS X9.37) provided for a fixed record file format. All records in the file were 80 characters. The standard now requires the use of a variable record file format due to the inclusion of images, the possible use of an URL and other variable data.

D.2 Methodology for Variable Length Record

Each record in the X9.100-180 standard is now defined as variable length and shall be preceded by a four (4) byte field known as the Inserted Length Field. The Inserted Length Field is not explicitly identified in the record layouts depicted in the body of this standard. This field contains the length of the record (represented as a 32-bit integer). The entity creating the X9.100-180 file calculates the length of each record and inserts the record length in the Inserted Length Field.

The Inserted Length Field is always binary and is stored in Motorola byte order (Big Endian). Inserted Length Field in Intel byte order (Little Endian) is permitted by agreement. For the Big Endian Inserted Length Field, the lowest storage address (or position) holds the most significant byte of the 32-bit integer. For the Little Endian Inserted Length Field, the lowest storage address (or position) holds the least significant byte of the 32-bit integer.

This Inserted Length Field allows different operating systems to process the X9.100-180 file as an unformatted file. Users of the standard are encouraged to talk to their software and hardware vendors to determine how the operating system accommodates unformatted files.

Section D.3 provides examples of records containing the Inserted Length Field in both Big and Little Endian format.

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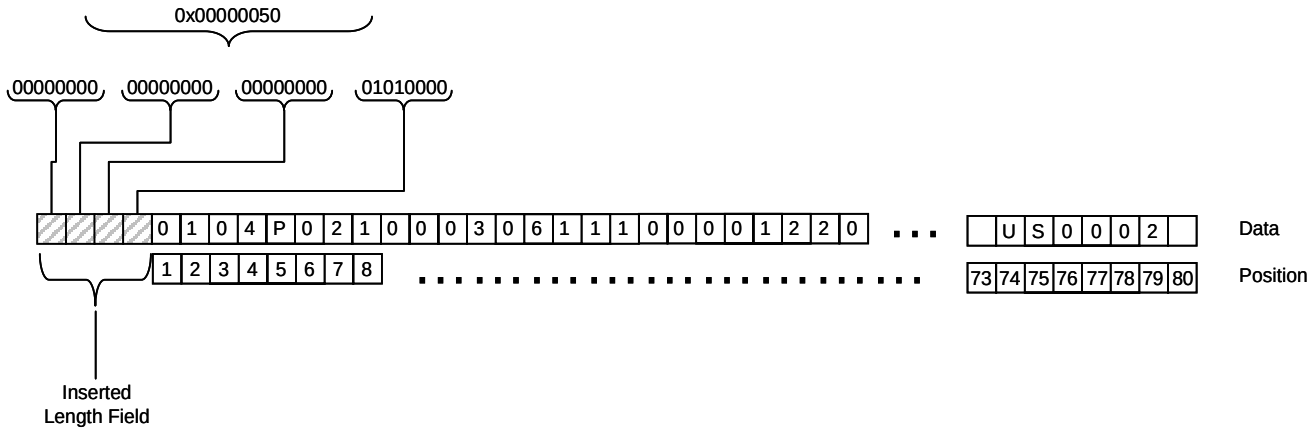
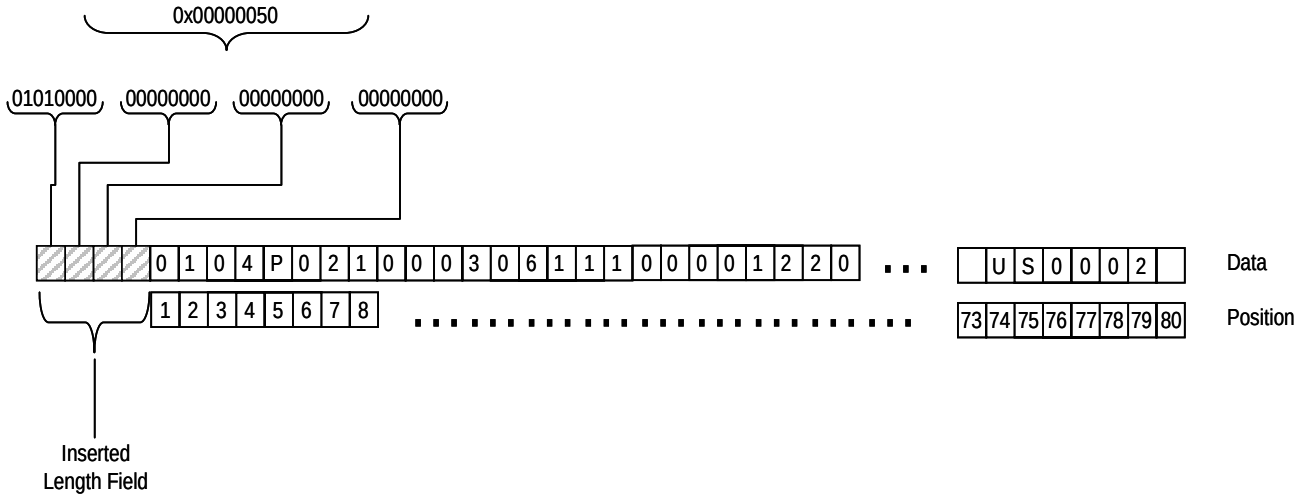
D.3 Samples of Variable Length Record

D.3.1 File Header Record (Type 01) – 80 (x'50) Characters



Big Endian - Inserted Length Field



Little Endian - Inserted Length Field

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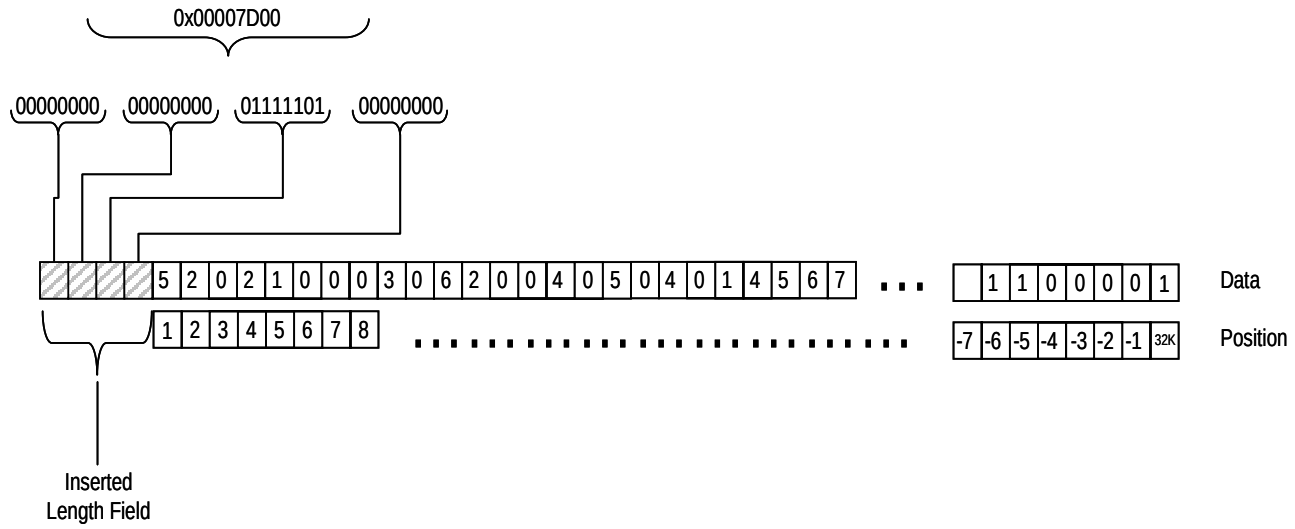
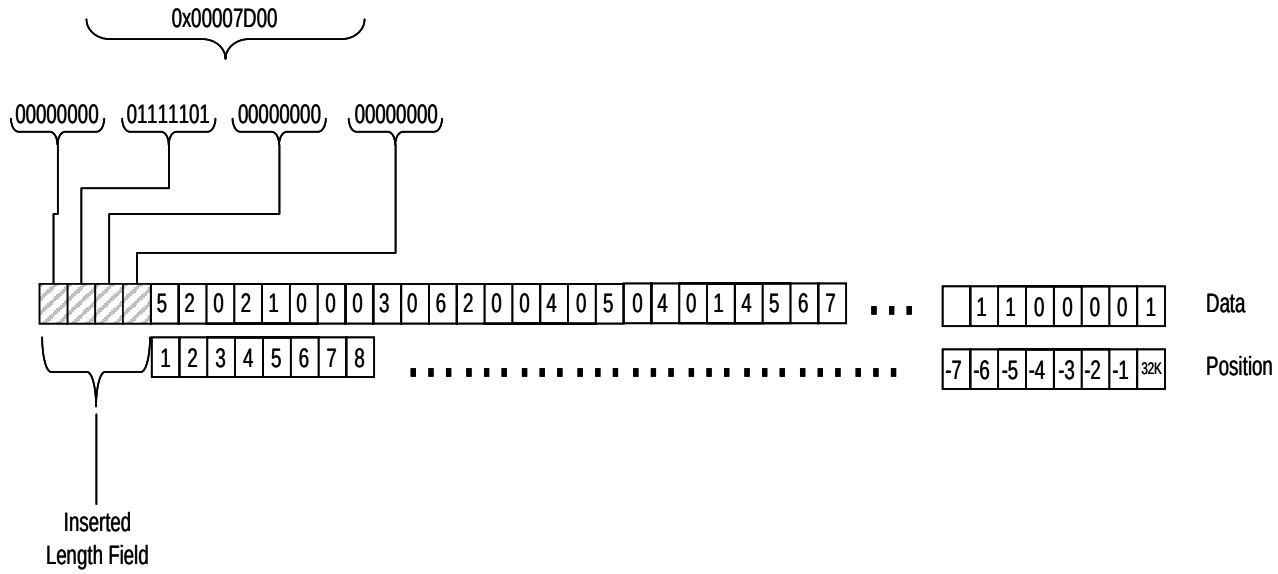
D.3.2 Image View Data Record (Type 52) – 32,000 (x'7D00) Characters



Big Endian - Inserted Length Field



Little Endian - Inserted Length Field

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Annex E
(Normative)
Rules for Using “ANC” Data Type

E.1 Rules for Using ANC Data Type

Syntax and semantics for the data contained in a field whose data type is “Alphanumeric/comma delimited" (ANC) and the rules for using the "ANC" data are specified below.

If the definition for an "ANC" field permits more than one value, then the values within the field shall be separated by a comma (‘,’). The syntax is "value1, value2, value3". Values shall occur in the order in which they are defined. That is, value 1 would be in the lower field character positions, value 2 in the adjacent higher field character positions, and so on. Character positions within fields shall be numbered consecutively; ‘1’ is the first character in the first field in the Record.

Conditional values within an "ANC" field that are not used may be omitted; however, commas shall be retained as appropriate to maintain position. Trailing commas are allowed but not required.

E.2 Illustration of Convention

To illustrate this convention, consider an example where an "ANC" field has three defined values V1, V2, and V3. In this case, the following data strings are valid:

V1,V2,V3 or V1,V2,V3,

V1,V2 or V1,V2,

V1,,V3

V1 or V1,,

,V2,V3

,V2 or ,V2,

,,V3

One or more consecutive commas at the start of the data string indicates that the leading value(s) is (are) missing.

E.3 Examples of Convention

Examples illustrating the use of the ANC data type in the Image Test Detail Record (Type 56) are given below.

Example 1 shows no trailing comma and example 2 shows a trailing comma.

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Referring to the Image Test Detail Record (Type 56) with an image test that has the following image test results (Rx) associated with Test Results (Field 9) and image test parameters (Px) associated with Test Parameters (Field 10):

Test Results:

R1= 483
R2 = 27

Test Parameters:

P1 = 330
P2 = 35
P3 = 691

This set of test result and parameter values could generate the following examples for Fields 6/9 and 7/10 using the ANC format:

For this example, the Test Results Length (Field 6) and Test Results (Field 9) would have the following values:

Example 1

Test Result Length (Field 6) = 6

Test Results (Field 9) = 483,27

Example 2

Test Result Length (Field 6) = 7

Test Results (Field 9) = 483,27,

For this example, the Test Parameters Length (Field 7) and Test Parameters (Field 10) would have the following values:

Example 1

Test Parameters Length (Field 7) = 10

Test Parameters (Field 10) = 330,35,691

Example 2

Test Parameters Length (Field 7) = 11

Test Parameters (Field 10) = 330,35,691,

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Annex F
(Normative)
Image Format and Compression Combinations

F.1 Allowable Combinations between Image View Format Indicator and Image View Compression Algorithm

The values in the Image View Format Indicator (Field 5) of the Image View Detail Record (Type 50) and the Image View Compression Algorithm Indicator (Field 6) of the Image View Detail Record (Type 50) may be self contained in which the Image Compression Algorithm Identifier is the same as the Image View Format Indicator. Certain image formats require the use of a specific compression algorithm and can be specified in the Image View Format Indicator (Field 5) of the Image View Detail Record (Type 50) and the Image View Compression Algorithm Indicator (Field 6) of the Image View Detail Record (Type 50). Other formats allow the use of several compression algorithms. Using both fields provides the most flexible and accurate information regarding the Image View Format and Image View Compression Algorithm. The combinations for "Image View Format Indicator" and "Image View Compression Algorithm Identifier" are defined in the following matrix.

	Field 5 – Image View Format Indicator						
Field 6 - Image View Compression Algorithm Identifier	**'00' TIFF 6 (C4 only)**	**'21' JPEG (JFIF)**	**'22' PNG**	**'23' TIFF 6 TN 2**	**'24' TIFF 6**	**'25' JPEG 2000**	**26' IOCA FS 11**
'00' Group 4	√	-	-	-	-	-	-
'21' JPEG Baseline	-	√	-	√ C7 for GS	√ C6 for GS	-	-
'22' PNG	-	-	√	-	-	-	-
'23' ABIC	-	-	-	-	-	-	√
'24' JPEG 2000	-	-	-	-	-	√	-
'25' LZW	-	-	-	-	√	-	-

Notes:
1. "C4", "C6", and "C7" refer to TIFF Compression tag values of '4', '6', and '7' respectively.
2. GS = Grayscale

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Annex G
(Normative)
Return Reasons Codes

G.1 Return Reason Codes

The table below identifies all return Reason Codes used in this standard. It identifies the code as used in this standard, the meaning of the code and the short text to be used in the X9.100-140 Standard (Specifications for an Image Replacement Document – IRD) in Region 7F of that standard.

Code	Description	X9.100-140 Usage
A	NSF – Not Sufficient Funds	NOT SUFFICIENT FUNDS
B	UCF – Uncollected Funds Hold	UNCOLLECTED FUNDS HOLD
C	Stop Payment	STOP PAYMENT
D	Closed Account	CLOSED ACCOUNT
E	UTLA – Unable to Locate Account	UNABLE TO LOCATE ACCT
F	Frozen/Blocked Account	FROZEN/BLOCKED ACCOUNT
G	Stale Dated	STALE DATED
H	Post Dated	POST DATED
I	Endorsement Missing	ENDORSEMENT MISSING
J	Endorsement Irregular	ENDORSEMENT IRREGULAR
K	Signature(s) Missing	SIGNATURE(S) MISSING
L	Signature(s) Irregular	SIGNATURE(S) IRREGULAR
M	Non-Cash Item (Non Negotiable)	NON-CASH ITEM
N	Altered/Fictitious Item	ALTERED/FICTITIOUS
O	Unable to process (e.g., Mutilated Item)	UNABLE TO PROCESS
P	Item Exceeds Dollar Limit	EXCEEDS DOLLAR LIMIT
Q	Not Authorized	NOT AUTHORIZED
R	Branch/Account Sold	BRANCH/ACCOUNT SOLD

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Code	Description	X9.100-140 Usage
S	Refer to Maker	REFER TO MAKER
T	Stop Payment Suspect	STOP PAYMENT SUSPECT
U	Unusable Image (Image could not be used for required business purpose)	UNUSABLE IMAGE
V	Image Fails Security Check	IMAGE FAILS SECURITY
W	Cannot Determine Amount	CANNOT DETERMINE AMT
Y	Duplicate Presentment	DUPLICATE PRESENTMENT
Z	Forgery	FORGERY
'9x'	IRD User Defined-See Return Text Overlay - x can be blank or any alphanumeric value at the discretion of the User. Can be used in this file for exchange, however when used on an IRD, an overlay would explain the user reason.	USER DEF-SEE OVERLAY
'01'-'09'	Not Used	
'2'	Unavailable Funds	UNAVAILABLE FUNDS
'3'	Ineligible	INELIGIBLE
'4'	Not Our Item (Wrong Bank)	NOT OUR ITEM
'5'	Retired ABA	RETIRED ABA
'6'	Suspected Counterfeit	SUSPECTED COUNTERFEIT
'7'	Counterfeit	COUNTERFEIT
'8'	Warranty Breach	WARRANTY BREACH
'9'	Amounts Differ	AMOUNTS DIFFER
'10'	Double Post	DOUBLE POST
'11'	Amount Not Authorized	AMOUNT NOT AUTHORIZED
'12'	Payee Deceased	PAYEE DECEASED
'13'	Personal Endorsement Missing	PERS ENDORSEMENT MISS
'14'	Check Fraud – Breach of Warranty	CK FRAUD – BREACH

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Code	Description	X9.100-140 Usage
‘15’	Non Conforming Image	NON CONFORMING IMAGE
‘16’	Non Conforming IRD	NON CONFORMING IRD
‘19’	Do Not Represent – Exceeds Presentment Limits	DO NOT REPRESENT
‘20’	Suspected Altered	SUSPECTED ALTERED
‘21’	Altered/Fictitious Amount	ALT/FICT AMOUNT
‘22’	Altered/Fictitious Date	ALT/FICT DATE
‘23’	Altered/Fictitious Payee Signature	ALT/FICT PAYEE SIGN
‘24’	Altered/Fictitious Payee Name	ALT/FICT PAYEE NAME
‘25’	Altered/Fictitious Maker	ALT/FICT MAKER
‘26’	Unable to Process/Mutilated Item – Missing Payee	UTP/MI–MISSING PAYEE
‘27’	Unable to Process/Mutilated Item – Missing Amount	UTP/MI–MISSING AMT
‘28’	Unable to Process/Mutilated Item – Missing Maker’s Signature	UTP/MI–MISS MAKER SIGN
‘31’	Signature Irregular – Not on File	SIGN IRREG–NOT ON FILE
‘32’	Signature Irregular – Two Signatures Required	SIGN IRREG–2 SIGN REQ
‘33’	Signature Irregular – Unauthorized Signature	SIGN IRREG–UNAUTH
‘34’	Signature Irregular – Questionable	SIGN IRREG–QUESTION
‘35’	Unable to Locate Account – Invalid Account	UTLA–INVALID ACCOUNT
‘36’	Unable to Locate Account – Divested Account	UTLA–DIVESTED ACCOUNT
‘41’	Missing Image (Front and Back)	MISSING IMAGE (F&B)
‘42’	Missing Image Front	MISSING IMAGE FRONT
‘43’	Missing Image Back	MISSING IMAGE BACK
‘50’	Fails Image Quality Analysis – Unusable	FAILS IQA – UNUSABLE
‘70’	Invalid Data for Field Data Type Usage within X9.100-180	INVALID DATA FOR TYPE
‘71’	Missing Mandatory Data within X9.100-180	MISS MAND DATA

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Code	Description	X9.100-140 Usage
‘72’	Not Acceptable Image Compression Type and/or Image Format Type	NA COMP/FORMAT
‘74’	Data Mismatch Between Pair Type 50 and Type 52 within X9.100-180	MISMATCH TYPE 50/52
‘75’	Image Decompression Error	IMAGE DECOMP ERROR
‘76’	Invalid Image Structure (i.e., missing tags, invalid values, etc.)	INVAL IMAGE STRUCTURE
‘77’	Sum of Variable Length Data Does Not Match Variable Length Data Elements within X9.100-180	VARIABLE DATA MISMATCH
‘78’	Forward Item in Return Bundle or Return item in a Forward Bundle within X9.100-180	INVALID ITEM IN BUNDLE
‘79’	Clipping Coordinates Inconsistent with Image Size within X9.100-180	CLIP COORD INVALID
‘80’	MICR Code Line on Check Image does not Match Type 25,or Type 31/33, or Type 27, or Type 34 Record Contents within X9.100-180	MISMATCHED MICR

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Annex H
(Informative)
Image Record Definitions

H.1 Image View Data Record (Type 52)

H.1.1 Item Reference Key

ECE Institution Routing Number (Field 2), Bundle Business Date (Field 3), Cycle Number (Field 4), and ECE Institution Item Sequence Number (Field 5) in the Image View Data Record (Type 52) make up an Item Reference Key that can be used to request information about the image view contained in this record from the creating ECE institution. See Annex K for more information.

H.1.2 Clipping Information

Clipping Origin (Field 9), Clipping Coordinate h1 (Field 10), Clipping Coordinate h2 (Field 11), Clipping Coordinate v1 (Field 12), and Clipping Coordinate v2 (Field 13) in the Image View Data Record (Type 52) comprise the Clipping Information. When Clipping Information is present, the view corresponding to a region of interest is contained within a rectangular array of pixels (the clipping rectangle) that is a subset of the conveyed image. The region of interest may be a full view (i.e., the entire document face) or a partial view (i.e., a snippet). The region scanned at image capture time may be larger than the physical item itself so the full view of the item may be contained within an area that is a subset of the actual conveyed image.

H.2 Image View Analysis Record (Type 54)

H.2.1 Quality

Partial Image (Field 5), Excessive Image Skew (Field 6), Piggyback Image (Field 7), Too Light (Field 8), Too Dark (Field 9), Streaks and or Bands (Field 10), Below Minimum Image Size (Field 11), Exceeds Maximum Image Size (Field 12) and Reserved (Fields 13 through 25) in the Image View Analysis Record (Type 54) comprise the Image Defect Information. These fields provide a defect analysis for an image view. Image defect fields refer to defect information that is present in the digital representation of the source document. Values for image defect fields are typically generated at image capture time but may be determined, or even changed if applicable, during subsequent application processing of the image. The presence of image defects may or may not indicate a potential image usability problem.

H.2.2 Usability

Image-Enabled POD (Field 26), Source Document Bad (Field 27), Date (Issue) Usability (Field 28), Payee Usability (Field 29), Convenience Amount Usability (Field 30), Amount in Words (Legal Amount) Usability (Field 31), Signature (Payor) Usability (Field 32), Payor Name and Address Usability (Field 33), MICR Line Usability (Field 34), Memo Line Usability (Field 35), Payor Bank Name and Address Usability (Field 36), Payee Endorsement Usability (Field 37), Bank of First Deposit Endorsement Usability (Field 38), Transit Endorsement Usability (Field 39) and Reserve (Field 40 through 45) in the Image View Analysis Record (Type 54) comprise the Image Usability Information. These fields identify the usability of different areas of interest within an image view. Image usability is defined as the presence and legibility of the information in a digital representation of a source document necessary to perform a specific function. These image usability fields indicate if particular information

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fields on an image are legible and readable. If an individual usability field is set to convey acceptable usability, it does not necessarily mean the image will be usable for all applications. Likewise, if an individual usability field is set to convey unacceptable usability, it does not necessarily mean that the image will be unusable for all applications. For example, if an image usability field is set to indicate that the memo line is unusable, then an application not needing the memo line may be able to use the image successfully.

H.2.3 Image Analysis User Information

Under agreement, the User Field (Field 46) in the Image View Analysis Record (Type 54) may be used in conjunction with the Imaging Bank Specific Test (Field 4) to convey the results of user-specific image view analysis tests.

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Annex I
(Informative)
MICR Valid Indicator

I.1 Use of the MICR Valid Indicator

The MICR Valid Indicator (Field 10) is a conditional one-character field in the Check Detail Record (Type 25); it is present only under clearing arrangements. Not all banks exchanging Electronic Exchange files use the field. There are, however, three reasons for using the field: Posting, Settlement and Net Reciprocal Accounting.

I.2 Posting

The collecting bank may use the MICR Valid Indicator field to notify the paying bank that it has identified a problem in reading the MICR line of the check; either a field is missing (e.g., On-Us Field), or the collecting bank's capture system discerns the presence of a MICR character but cannot interpret it, replacing the unreadable character with an asterisk " * ". Use of values other than "Good Read (1)" in the MICR Valid Indicator field usually implies the check cannot be posted from the electronic check record. Collecting banks may want to include checks in the file that will not be eligible for posting; when paper or image is provided separately from the Electronic Exchange file, the collecting banks may prefer to include all checks in the file rather than sort these checks into separate pockets. Banks may be able to correct the MICR line from the displayed image.

I.3 Accounting

I.3.1 Settlement

The paying bank may use the MICR Valid Indicator field to consider performing two settlements. If so, an initial settlement on the amount of the checks that can be posted from the electronic check file and a second settlement based on the physical items and/or images when they are received and any items needing repair are corrected.

I.3.2 Net Reciprocal Accounting

This process allows two banks electronically exchanging checks to perform Net Reciprocal Accounting. The paying bank may use the MICR Valid Indicator field to net the dollar amount of the postable checks and use the net amount for posting purposes.

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Annex J
(Informative)
Examples of Electronic Exchange File Structures

J.1 Examples

The following are examples of file structures that meet the requirements of the standard. The examples shown are representative samples of file structures and are **not** the only structures permitted.

J.1.1 Example 1

File with multiple forward presentment cash letters containing Check Detail Addendum A Records (Type 26), Check Detail Addendum B Records (Type 27), Check Detail Addendum C Records (Type 28), Credit/Reconciliation Records (Type 61), Digital Certificate Records (Type 64), User Records (Type 68), Box Summary Records (Type 75), and Routing Number Summary Records (Type 85); contains electronic and image exchange records.

FILE HEADER RECORD (Type 01)

Cash Letter Header Record (Type 10) (first cash letter of file)
Digital Certificate Record (Type 64) (first certificate)
Digital Certificate Record (Type 64) (second certificate)

||
||

Digital Certificate Record (Type 64) (last certificate)
Bundle Header Record (Type 20) (first bundle of cash letter)
Check Detail Record (Type 25) (first item of first bundle)
Check Detail Addendum A Record (Type 26) (for first item of first bundle)
Check Detail Addendum B Record (Type 27) (for first item of first bundle)
Image View Detail Record (Type 50) (first item, front view, of first bundle)
Image View Data Record (Type 52) (first item, front view, of first bundle)
Image Test Summary Record (Type 55) (first item, front view, of first bundle)
Image Test Detail Record (Type 56) (first item, front view, of first bundle)
Image Test Detail Record (Type 56) (first item, front view, of first bundle)
Image View Detail Record (Type 50) (first item, rear view, of first bundle)
Image View Data Record (Type 52) (first item, rear view, of first bundle)
Image Test Summary Record (Type 55) (first item, rear view, of first bundle)
Image Test Detail Record (Type 56) (first item, rear view, of first bundle)
Check Detail Record (Type 25) (second item of first bundle)
Check Detail Addendum A Record (Type 26) (for second item of first bundle)
Check Detail Addendum B Record (Type 27) (for second item of first bundle)
Check Detail Addendum C Record (Type 28) (for second item of first bundle)
Image View Detail Record (Type 50) (second item, front view, of first bundle)
Image View Data Record (Type 52) (second item, front view, of first bundle)
Image Test Summary Record (Type 55) (second item, front view, of first bundle)
Image Test Detail Record (Type 56) (second item, front view, of first bundle)
Image View Detail Record (Type 50) (second item, rear view, of first bundle)

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Image View Data Record (Type 52) (second item, rear view, of first bundle)
Image Test Summary Record (Type 55) (second item, rear view, of first bundle)
Image Test Detail Record (Type 56) (second item, rear view, of first bundle)

||
||

Check Detail Record (Type 25) (last item of first bundle)
Check Detail Addendum A Record (Type 26) (for last item of first bundle)
Check Detail Addendum B Record (Type 27) (for last item of first bundle)
Image View Detail Record (Type 50) (last item, front view, of first bundle)
Image View Data Record (Type 52) (last item, front view, of first bundle)
Image Test Summary Record (Type 55) (last item, front view, of first bundle)
Image Test Detail Record (Type 56) (last item, front view, of first bundle)
Image View Detail Record (Type 50) (last item, rear view, of first bundle)
Image View Data Record (Type 52) (last item, rear view, of first bundle)
Image Test Summary Record (Type 55) (last item, rear view, of first bundle)
Image Test Detail Record (Type 56) (last item, rear view, of first bundle)
Credit/Reconciliation Record (Type 61) (first bundle – adjustment)
Bundle Control Record (Type 70) (end of first bundle of cash letter)
Bundle Header Record (Type 20) (second bundle of cash letter)
Credit/Reconciliation Record (Type 61) (second bundle – adjustment)
Check Detail Record (Type 25) (first item of second bundle)
Check Detail Addendum A Record (Type 26) (for first item of second bundle)
Image View Detail Record (Type 50) (first item, front view, of second bundle)
Image View Data Record (Type 52) (first item, front view, of second bundle)
Image Test Summary Record (Type 55) (first item, front view, of second bundle)
Image Test Detail Record (Type 56) (first item, front view, of second bundle)
Image View Detail Record (Type 50) (first item, rear view, of second bundle)
Image View Data Record (Type 52) (first item, rear view, of second bundle)
Image Test Summary Record (Type 55) (first item, rear view, of second bundle)
Image Test Detail Record (Type 56) (first item, rear view, of second bundle)
Check Detail Record (Type 25) (second item of second bundle)
Check Detail Addendum A Record (Type 26) (for second item of second bundle)
Check Detail Addendum B Record (Type 27) (for second item of second bundle)
Image View Detail Record (Type 50) (second item, front view, of second bundle)
Image View Data Record (Type 52) (second item, front view, of second bundle)
Image Test Summary Record (Type 55) (second item, front view, of second bundle)
Image Test Detail Record (Type 56) (second item, front view, of second bundle)
Image View Detail Record (Type 50) (second item, rear view, of second bundle)
Image View Data Record (Type 52) (second item, rear view, of second bundle)
Image Test Summary Record (Type 55) (second item, rear view, of second bundle)
Image Test Detail Record (Type 56) (second item, rear view, of second bundle)
Image Test Detail Record (Type 56) (second item, rear view, of second bundle)

||
||

Check Detail Record (Type 25) (last item of second bundle)
Check Detail Addendum A Record (Type 26) (for last item of second bundle)
Check Detail Addendum C Record (Type 28) (for last item of second bundle)
Image View Detail Record (Type 50) (last item, front view, of second bundle)

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Image View Data Record (Type 52) (last item, front view, of second bundle)
Image Test Summary Record (Type 55) (last item, front view, of second bundle)
Image Test Detail Record (Type 56) (last item, front view, of second bundle)
Image View Detail Record (Type 50) (last item, rear view, of second bundle)
Image View Data Record (Type 52) (last item, rear view, of second bundle)
Image Test Summary Record (Type 55) (last item, rear view, of second bundle)
Image Test Detail Record (Type 56) (last item, rear view, of second bundle)

Bundle Control Record (Type 70) (end of second bundle of cash letter)

||
||

Bundle Header Record (Type 20) (last bundle of cash letter)

Check Detail Record (Type 25) (first item of last bundle)

Check Detail Addendum A Record (Type 26) (for first item of last bundle)
Image View Detail Record (Type 50) (first item, front view, of last bundle)
Image View Data Record (Type 52) (first item, front view, of last bundle)
Image Test Summary Record (Type 55) (first item, front view, of last bundle)
Image Test Detail Record (Type 56) (first item, front view, of last bundle)
Image View Detail Record (Type 50) (first item, rear view, of last bundle)
Image View Data Record (Type 52) (first item, rear view, of last bundle)
Image Test Summary Record (Type 55) (first item, rear view, of last bundle)
Image Test Detail Record (Type 56) (first item, rear view, of last bundle)

Check Detail Record (Type 25) (second item of last bundle)

Check Detail Addendum A Record (Type 26) (for second item of last bundle)
Image View Detail Record (Type 50) (second item, front view, of last bundle)
Image View Data Record (Type 52) (second item, front view, of last bundle)
Image Test Summary Record (Type 55) (second item, front view, of last bundle)
Image Test Detail Record (Type 56) (second item, front view, of last bundle)
Image View Detail Record (Type 50) (second item, rear view, of last bundle)
Image View Data Record (Type 52) (second item, rear view, of last bundle)
Image Test Summary Record (Type 55) (second item, rear view, of last bundle)
Image Test Detail Record (Type 56) (second item, rear view, of last bundle)

||
||

Check Detail Record (Type 25) (last item of last bundle)

Check Detail Addendum A Record (Type 26) (for last item of last bundle)
Check Detail Addendum B Record (Type 27) (for last item of last bundle)
Check Detail Addendum C Record (Type 28) (for last item of last bundle)
Image View Detail Record (Type 50) (last item, front view, of last bundle)
Image View Data Record (Type 52) (last item, front view, of last bundle)
Image Test Summary Record (Type 55) (last item, front view, of last bundle)
Image Test Detail Record (Type 56) (last item, front view, of last bundle)
Image View Detail Record (Type 50) (last item, rear view, of last bundle)
Image View Data Record (Type 52) (last item, rear view, of last bundle)
Image Test Summary Record (Type 55) (last item, rear view, of last bundle)
Image Test Detail Record (Type 56) (last item, rear view, of last bundle)

Bundle Control Record (Type 70) (end of last bundle of cash letter)

Routing Number Summary Record (Type 85) (for a routing number appearing in the Check Detail Records in the bundles within this cash letter)

Routing Number Summary Record (Type 85) (for another routing number appearing in the

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Check Detail Records in the bundles within this cash letter)
Routing Number Summary Record (Type 85) (for another routing number appearing in the Check Detail Records in the bundles within this cash letter)
User Record (Type 68)
Cash Letter Control Record (Type 90) (end of first cash letter)
Cash Letter Header Record (Type 10) (second cash letter of file)
Bundle Header Record (Type 20) (first bundle of cash letter)
Credit/Reconciliation Record (Type 61) (first bundle of second cash letter – credit first offset for next items)
Check Detail Record (Type 25) (first item of first bundle of second cash letter)
Check Detail Addendum A Record (Type 26) (for first item of first bundle of second cash letter)
Check Detail Addendum B Record (Type 27) (for first item of first bundle of second cash letter)
Image View Detail Record (Type 50) (first item, front view, of first bundle of second cash letter)
Image View Data Record (Type 52) (first item, front view, of first bundle of second cash letter)
Image View Detail Record (Type 50) (first item, rear view, of first bundle of second cash letter)
Image View Data Record (Type 52) (first item, rear view, of first bundle of second cash letter)
Check Detail Record (Type 25) (second item of first bundle of second cash letter)
Check Detail Addendum A Record (Type 26) (for second item of first bundle of second cash letter)
Image View Detail Record (Type 50) (second item, front view, of first bundle of second cash letter)
Image View Data Record (Type 52) (second item, front view, of first bundle of second cash letter)
Image View Detail Record (Type 50) (second item, rear view, of first bundle of second cash letter)
Image View Data Record (Type 52) (second item, rear view, of first bundle of second cash letter)
Credit/Reconciliation Record (Type 61) (first bundle of second cash letter – credit first offset for next items)

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||

Check Detail Record (Type 25) (last item of first bundle)
Check Detail Addendum A Record (Type 26) (for last item of first bundle)
Image View Detail Record (Type 50) (last item, front view, of first bundle)
Image View Data Record (Type 52) (last item, front view, of first bundle)
Image View Detail Record (Type 50) (last item, rear view, of first bundle)
Image View Data Record (Type 52) (last item, rear view, of first bundle)
Bundle Control Record (Type 70) (end of first bundle of cash letter)
Bundle Header Record (Type 20) (second bundle of cash letter)
Credit/Reconciliation Record (Type 61) (second bundle of second cash letter – credit first offset)
Check Detail Record (Type 25) (first item of second bundle)
Check Detail Addendum A Record (Type 26) (for first item of second bundle)
Image View Detail Record (Type 50) (first item, front view, of second bundle)
Image View Data Record (Type 52) (first item, front view, of second bundle)
Image View Detail Record (Type 50) (first item, rear view, of second bundle)
Image View Data Record (Type 52) (first item, rear view, of second bundle)
Check Detail Record (Type 25) (second item of second bundle)
Check Detail Addendum A Record (Type 26) (for second item of second bundle)
Check Detail Addendum B Record (Type 27) (for second item of second bundle)
Check Detail Addendum C Record (Type 28) (for second item of second bundle)
Image View Detail Record (Type 50) (second item, front view, of second bundle)
Image View Data Record (Type 52) (second item, front view, of second bundle)
Image View Detail Record (Type 50) (second item, rear view, of second bundle)

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Image View Data Record (Type 52) (second item, rear view, of second bundle)

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||

Check Detail Record (Type 25) (last item of second bundle)
Check Detail Addendum A Record (Type 26) (for last item of second bundle)
Image View Detail Record (Type 50) (last item, front view, of second bundle)
Image View Data Record (Type 52) (last item, front view, of second bundle)
Image Test Summary Record (Type 55) (last item, front view, of second bundle)
Image Test Detail Record (Type 56) (last item, front view, of second bundle)
Image View Detail Record (Type 50) (last item, rear view, of second bundle)
Image View Data Record (Type 52) (last item, rear view, of second bundle)
Image Test Summary Record (Type 55) (last item, rear view, of second bundle)
Image Test Detail Record (Type 56) (last item, rear view, of second bundle)
Bundle Control Record (Type 70) (end of second bundle of cash letter)

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Bundle Header Record (Type 20) (last bundle of cash letter)
Check Detail Record (Type 25) (first item of last bundle)
Check Detail Addendum A Record (Type 26) (for first item of last bundle)
Image View Detail Record (Type 50) (first item, front view, of last bundle)
Image View Data Record (Type 52) (first item, front view, of last bundle)
Image View Detail Record (Type 50) (first item, rear view, of last bundle)
Image View Data Record (Type 52) (first item, rear view, of last bundle)
Check Detail Record (Type 25) (second item of last bundle)
Check Detail Addendum A Record (Type 26) (for second item of last bundle)
Image View Detail Record (Type 50) (second item, front view, of last bundle)
Image View Data Record (Type 52) (second item, front view, of last bundle)
Image View Detail Record (Type 50) (second item, rear view, of last bundle)
Image View Data Record (Type 52) (second item, rear view, of last bundle)

Credit/Reconciliation Record (Type 61) (third item of last bundle of second cash letter – credit first offset for next items)

||
||

Check Detail Record (Type 25) (last item of last bundle)
Check Detail Addendum A Record (Type 26) (for last item of last bundle)
Image View Detail Record (Type 50) (last item, front view, of last bundle)

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Image View Data Record (Type 52) (last item, front view, of last bundle)
Image View Detail Record (Type 50) (last item, rear view, of last bundle)
Image View Data Record (Type 52) (last item, rear view, of last bundle)
Bundle Control Record (Type 70) (end of last bundle of cash letter)
Box Summary Record (Type 75) (summary of 1st through last bundle of cash letter)
Routing Number Summary Record (Type 85) (for a routing number appearing in the Check Detail Records in the bundles within this cash letter)
Routing Number Summary Record (Type 85) (for another routing number appearing in the Check Detail Records in the bundles within this cash letter)
User Record (Type 68)
Cash Letter Control Record (Type 90) (end of second cash letter)

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||

Cash Letter Header Record (Type 10) (last cash letter of file)
Bundle Header Record (Type 20) (first bundle of cash letter)
Check Detail Record (Type 25) (first item of first bundle)
User Record (Type 68) – Format Type 001 Payee Endorsement (first tem of first bundle)
Check Detail Addendum A Record (Type 26) (for first item of first bundle)
Image View Detail Record (Type 50) (first item, front view, of first bundle)
Image View Data Record (Type 52) (first item, front view, of first bundle)
Image View Detail Record (Type 50) (first item, rear view, of first bundle)
Image View Data Record (Type 52) (first item, rear view, of first bundle)

||

Check Detail Record (Type 25) (last item of first bundle)
User Record (Type 68) – Format Type 001 Payee Endorsement (last item of first bundle)
Check Detail Addendum A Record (Type 26) (for last item of first bundle)
Check Detail Addendum B Record (Type 27) (for last item of first bundle)
Check Detail Addendum C Record (Type 28) (for last item of first bundle)
Image View Detail Record (Type 50) (last item, front view, of first bundle)
Image View Data Record (Type 52) (last item, front view, of first bundle)
Image View Detail Record (Type 50) (last item, rear view, of first bundle)
Image View Data Record (Type 52) (last item, rear view, of first bundle)
Bundle Control Record (Type 70) (end of first bundle of cash letter)

||
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Bundle Header Record (Type 20) (last bundle of cash letter)
Check Detail Record (Type 25) (first item of last bundle)
Check Detail Addendum A Record (Type 26) (for first item of last bundle)
Check Detail Addendum B Record (Type 27) (for first item of last bundle)
Image View Detail Record (Type 50) (first item, front view, of last bundle)
Image View Data Record (Type 52) (first item, front view, of last bundle)
Image View Detail Record (Type 50) (first item, rear view, of last bundle)
Image View Data Record (Type 52) (first item, rear view, of last bundle)

||
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Check Detail Record (Type 25) (last item of last bundle)
Check Detail Addendum A Record (Type 26) (for last item of last bundle)
Image View Detail Record (Type 50) (last item, front view, of last bundle)
Image View Data Record (Type 52) (last item, front view, of last bundle)
Image View Detail Record (Type 50) (last item, rear view, of last bundle)
Image View Data Record (Type 52) (last item, rear view, of last bundle)
Bundle Control Record (Type 70) (end of last bundle of cash letter)
Cash Letter Control Record (Type 90) (end of last cash letter)
FILE CONTROL RECORD (Type 99)

J.1.2 Example 2

File with multiple return cash letters containing Return Addendum A Records (Type 32), Return Addendum B Records (Type 33), Return Addendum C Records (Type 34), and Return Addendum D Records (Type 35); contains electronic and image return records.

FILE HEADER RECORD (Type 01)

Cash Letter Header Record (Type 10) (first cash letter of file)
User Record (Type 68) – Format Type 002 Destination Record (first cash letter of file)
Bundle Header Record (Type 20) (first bundle of cash letter)
Return Record (Type 31) (first item of first bundle)
Return Addendum B Record (Type 33) (for first item of first bundle)
Return Record (Type 31) (second item of first bundle)
Return Addendum A Record (Type 32) (for second item of first bundle)
Return Addendum B Record (Type 33) (for second item of first bundle)
Return Addendum C Record (Type 34) (for second item of first bundle)
Return Addendum D Record (Type 35) (for second item of first bundle)

||
||

Return Record (Type 31) (last item of first bundle)
Return Addendum A Record (Type 32) (for last item of first bundle)
Return Addendum B Record (Type 33) (for last item of first bundle)
Bundle Control Record (Type 70) (end of first bundle of cash letter)
Bundle Header Record (Type 20) (second bundle of cash letter)
Return Record (Type 31) (first item of second bundle)
Return Addendum B Record (Type 33) (for first item of second bundle)

||
||

||
||

Return Record (Type 31) (last item of second bundle)
Return Addendum A Record (Type 32) (for last item of second bundle)
Return Addendum B Record (Type 33) (for last item of second bundle)
Bundle Control Record (Type 70) (end of second bundle of cash letter)

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Bundle Header Record (Type 20) (last bundle of cash letter)
Return Record (Type 31) (first item of last bundle)
Return Addendum B Record (Type 33) (for first item of last bundle)
Return Record (Type 31) (second item of last bundle)
Return Addendum B Record (Type 33) (for second item of last bundle)

||
||

Return Record (Type 31) (last item of last bundle)
Return Addendum B Record (Type 33) (for last item of last bundle)
Bundle Control Record (Type 70) (end of last bundle of cash letter)
Cash Letter Control Record (Type 90) (end of first cash letter)
Cash Letter Header Record (Type 10) (second cash letter of file)
User Record (Type 68) – Format Type 002 Destination Record (second cash letter of file)
Bundle Header Record (Type 20) (first bundle of cash letter)
Return Record (Type 31) (first item of first bundle)
Return Addendum B Record (Type 33) (for first item of first bundle)
Image View Detail Record (Type 50) (first item, front view, of first bundle)
Image View Data Record (Type 52) (first item, front view, of first bundle)
Image View Detail Record (Type 50) (first item, rear view, of first bundle)
Image View Data Record (Type 52) (first item, rear view, of first bundle)

||
||

Return Record (Type 31) (last item of first bundle)
Return Addendum B Record (Type 33) (for last item of first bundle)
Image View Detail Record (Type 50) (last item, front view, of first bundle)
Image View Data Record (Type 52) (last item, front view, of first bundle)
Image View Detail Record (Type 50) (last item, rear view, of first bundle)
Image View Data Record (Type 52) (last item, rear view, of first bundle)
Bundle Control Record (Type 70) (end of first bundle of cash letter)
Bundle Header Record (Type 20) (second bundle of cash letter)

||
||

Return Record (Type 31) (last item of second bundle)
Return Addendum B Record (Type 33) (for last item of second bundle)
Image View Detail Record (Type 50) (last item, front view, of second bundle)
Image View Data Record (Type 52) (last item, front view, of second bundle)
Image View Detail Record (Type 50) (last item, rear view, of second bundle)
Image View Data Record (Type 52) (last item, rear view, of second bundle)
Bundle Control Record (Type 70) (end of second bundle of cash letter)

||
||

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Bundle Header Record (Type 20) (last bundle of cash letter)
Return Record (Type 31) (first item of last bundle)
Return Addendum B Record (Type 33) (for first item of last bundle)
Image View Detail Record (Type 50) (first item, front view, of last bundle)
Image View Data Record (Type 52) (first item, front view, of last bundle)
Image View Detail Record (Type 50) (first item, rear view, of last bundle)
Image View Data Record (Type 52) (first item, rear view, of last bundle)

||
||

Return Record (Type 31) (last item of last bundle)
Return Addendum B Record (Type 33) (for last item of last bundle)
Image View Detail Record (Type 50) (last item, front view, of last bundle)
Image View Data Record (Type 52) (last item, front view, of last bundle)
Image View Detail Record (Type 50) (last item, rear view, of last bundle)
Image View Data Record (Type 52) (last item, rear view, of last bundle)
Bundle Control Record (Type 70) (end of last bundle of cash letter)
Cash Letter Control Record (Type 90) (end of second cash letter)

||
||

Cash Letter Header Record (Type 10) (last cash letter of file)
User Record (Type 68) – Format Type 002 Destination Record (last cash letter of file)
Bundle Header Record (Type 20) (first bundle of cash letter)
Return Record (Type 31) (first item of first bundle)
Return Addendum A Record (Type 32) (for first item of first bundle)
Return Addendum B Record (Type 33) (for first item of first bundle)
Image View Detail Record (Type 50) (first item, front view, of first bundle)
Image View Data Record (Type 52) (first item, front view, of first bundle)
Image View Detail Record (Type 50) (first item, rear view, of first bundle)
Image View Data Record (Type 52) (first item, rear view, of first bundle)

||
||

Return Record (Type 31) (last item of first bundle)
Return Addendum B Record (Type 33) (for last item of first bundle)
Image View Detail Record (Type 50) (last item, front view, of first bundle)
Image View Data Record (Type 52) (last item, front view, of first bundle)
Image View Detail Record (Type 50) (last item, rear view, of first bundle)
Image View Data Record (Type 52) (last item, rear view, of first bundle)
Bundle Control Record (Type 70) (end of first bundle of cash letter)

||
||

Bundle Header Record (Type 20) (last bundle of cash letter)
Return Record (Type 31) (first item of last bundle)
Return Addendum A Record (Type 32) (for first item of last bundle)
Return Addendum B Record (Type 33) (for first item of last bundle)

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Image View Detail Record (Type 50) (first item, front view, of last bundle)
Image View Data Record (Type 52) (first item, front view, of last bundle)
Image View Detail Record (Type 50) (first item, rear view, of last bundle)
Image View Data Record (Type 52) (first item, rear view, of last bundle)

||
||

Return Record (Type 31) (last item of last bundle)
Return Addendum B Record (Type 33) (for last item of last bundle)
Image View Detail Record (Type 50) (last item, front view, of last bundle)
Image View Data Record (Type 52) (last item, front view, of last bundle)
Image View Detail Record (Type 50) (last item, rear view, of last bundle)
Image View Data Record (Type 52) (last item, rear view, of last bundle)
Bundle Control Record (Type 70) (end of last bundle of cash letter)
Cash Letter Control Record (Type 90) (end of last cash letter)
FILE CONTROL RECORD (Type 99)

J.1.3 Example 3

File with key account totals for multiple forward presentment cash letters for multiple endpoints with no detail.

FILE HEADER RECORD (Type 01)

Cash Letter Header Record (Type 10) (first cash letter of file)
Account Totals Record (Type 40) (first key account or account range)
Account Totals Record (Type 40) (second key account or account range)

||
||

Account Totals Record (Type 40) (last key account or account range)
Non-Hit Totals Record (Type 41) (Out of range total record)
Non-Hit Totals Record (Type 41) (Invalid accounts total record)
Cash Letter Control Record (Type 90) (end of first cash letter)
Cash Letter Header Record (Type 10) (second cash letter of file for same or different endpoint)
Account Totals Record (Type 40) (first key account or account range)
Account Totals Record (Type 40) (second key account or account range)

||
||

Account Totals Record (Type 40) (last key account or account range)
Non-Hit Totals Record (Type 41) (Out of range total record)
Non-Hit Totals Record (Type 41) (Invalid accounts total record)
Cash Letter Control Record (Type 90) (end of second cash letter)
FILE CONTROL RECORD (Type 99)

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Annex K
(Informative)
Image Keys

K.1 Use of Image Keys

It is important to have a method for one entity to communicate with another to uniquely identify, request and locate images in various locations. The term Image Key is used as an overall title of the methodologies used to locate the image.

The standard allows for a number of methodologies to determine the Image Key.

If the Item Reference Key is unique, the Image Reference Key is unnecessary.

K.2 Item Reference Key

The Item Reference Key is transaction based and should be constructed with the following minimum data fields:

From the Bundle Header Record (Type 20):

- Bundle ECE Institution Routing Number (Field 4)
- Bundle Business Date (Field 5)
- Cycle Number (Field 9)

From the Check Detail Record (Type 25):

- ECE Institution Item Sequence Number (Field 7)

The sending entity should ensure that the combination of these fields yield a unique number that allows image retrieval. If this number is not unique, then additional MICR fields (Fields 2 - 6) from the Check Detail Record (Type 25) will be required to locate the image.

K.3 Image Reference Key

The Image Reference Key is image based and should consist of the following data elements:

Routing Number or an Identification Number for a Non-Financial Institution

Date

Cycle Number

Sequence Number

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It is desirable for these data elements to correspond to the fields that make up the Item Reference Key. If the Item Reference Key is not unique, then Image Reference Key fields are present and may differ from some of the corresponding fields in the Item Reference Key. The Image Reference Key may or may not be the same as the Item Reference Key or the Image Archive Locator (Field 13) in Check Detail Addendum B Record (Type 27) or Image Archive Locator (Field 13) in Return Addendum C Record (Type 34).

K.4 Image Archive Locator

The Image Archive Locator (Field 13) in the Check Detail Addendum B Record (Type 27) or Image Archive Locator (Field 13) in Return Addendum C Record (Type 34) is populated when the number is known at the time of the creation and sending of the file. This number is assigned by the sending bank and would allow the sending bank to locate and retrieve an image. It is a reference that can be used by the receiving bank to identify the item in the sender's image archive system and may be a URL that allows direct access.

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Annex L
(Informative)
Endorsements

L.1 General

A financial institution endorsement is a signature either alone or accompanied by other words for purposes of negotiating the instrument, restricting payment of the instrument, or incurring endorser's liability on the instrument. Both the Uniform Commercial Code and Regulation CC place certain responsibilities regarding endorsements on the parties handling a check. The Check Clearing for the 21st Century Act requires that all previous endorsements be carried on the substitute check (IRD) whether the party endorsed in physical or electronic form. Subsequent conversions of an item between paper and electronic form are possible.

Payees that are creating electronic deposit files may need to include electronic endorsements. This can be accomplished by using the User Record (Type 68) – Format Type 001 - Payee Endorsement Record. Customers creating electronic files with payee endorsements will need agreements with their bank on the proper handling of these records.

The BOFD endorsement is intended to indicate where the item is to be returned if dishonored by the paying bank. Typically the depositor places a payee endorsement in a specific area on the back of the check. Then the Bank of First Deposit (BOFD) is required to endorse the check in a specific area and with a specific indication that it is the BOFD. Some customers use a Return Processing Bank for their deposited checks rather than their depositary bank. In these situations the Return Processing Bank is identified as the BOFD for purposes of items returned by the paying bank. The Return Processing Bank routing number with inward pointing arrows "> <" is used in the normal BOFD endorsement area instead of the depositary bank's routing number. It is usually difficult for the depositary bank to distinguish deposits using a Return Processing Bank from other deposits, and therefore might include its own nine digit routing number with inward pointing arrows "> <" during capture. In cases where both endorsements appear in the BOFD endorsement area with inward pointing arrows "> <", legally returns may be sent to the BOFD or the Return Processing Bank, but the Return Processing Bank is preferred if it is known.

All financial institutions (other than the paying bank) that handle a check during forward collection or as a returned check are required to legibly endorse the check in accordance with the requirements of Regulation CC. In order to provide audit trail traceability back to the BOFD, the endorsement chain indicating the BOFD and intermediary financial institutions handling the item must be preserved. This applies whether the item is paper or electronic. The BOFD must provide its financial institution's nine-digit routing number set off by arrows at each end of the number "> <", the financial institution's name/location, the endorsement date and optional data. Subsequent collecting or returning banks are required to protect the identifiability and legibility of the depositary bank and include its own nine-digit routing number (without arrows), the endorsement date and an optional trace/sequence number. Financial institution endorsements are sprayed or printed on the back of checks in the normal course of processing.

L.2 Use of the Standard for Endorsements

There are two ways in which endorsements will be carried in the X9.100-180 standard. When a check is imaged, the physical endorsements that were either printed or sprayed on the check prior to imaging will be captured in the image contained in the Image View Data Record (Type 52) as the physical endorsement. In addition, the standard has a Check Detail Addendum A Record (Type 26), Check Detail Addendum C Record (Type 28), Return Record (Type 31), Return Addendum A Record (Type 32), Return Addendum B Record (Type 33), and a Return Addendum D Record (Type 35) that includes fields required for endorsement information and can be used for electronic endorsements.

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When a paper item is truncated and converted to an electronic item with an image, the physical endorsements on the paper item prior to imaging will appear in the image. The endorsement chain is continued through the physical endorsements visible in the image plus the electronic endorsements added to the X9.100-180 file. The physical endorsement for the image creator will not appear in the image if the image is captured prior to the item being physically endorsed. Electronic endorsement for the image creator institution will appear in the X9.100-180 file as either a physical (in the image) and an electronic endorsement or as an electronic endorsement alone. Electronic endorsements alone are acceptable. An image by itself does not constitute an electronic item. The electronic item comprises the Check Detail Record (Type 25) or Return Record (Type 31) and Return Addendum B Record (Type 33) along with the related addendum and image records contained in the X9.100-180 file.

The standard allows for the inclusion of payee endorsements. It also allows for the distinction between the actual BOFD and a Return Processing Bank.

L.3 Suggested Implementation Considerations

- Any physical endorsement information on the item prior to truncation should be maintained in the image of the item. Capture equipment should be maintained and thresholding selected to minimize data loss.

- An electronic payee endorsement can be created by using the User Record (Type 68) – Format Type 001 - Payee Endorsement Record. See Clause 29.

- Any electronic endorsement information that is included in the Check Detail Addendum A Record (Type 26), Check Detail Addendum C Record (Type 28), Return Record/Return Addendum B Record (Type 31/33), Return Addendum A Record (Type 32), and Return Addendum D Record (Type 35) records should be retained and forwarded with the electronic item.

- When a forward item (Type 2x's) becomes a return item (Type 3x's), the endorsement information included in the Check Detail Addendum A Record (Type 26) and Check Detail Addendum C Record (Type 28) should be moved into the Return Addendum A Record (Type 32) and Return Addendum D Record (Type 35) respectively.

- The paying bank is not legally required to endorse the item; under Check 21/Reg CC it is required to identify itself when it is a Reconverting Bank. When the paying bank is the reconverting bank, as in situations when an outgoing return is being created as a substitute check (IRD) or for image exchange, the paying bank should create a Return Addendum D Record (Type 35) with their appropriate endorsement information.

- Electronic bank endorsements are typically conveyed in the following Records:

  ⇒ Check Detail Addendum A Record (Type 26) – This typically includes the BOFD information created by the BOFD. The original BOFD information may be obtained from a Return Addendum A Record (Type 32) when an item is received as a return and then re-deposited. Multiple Check Detail Addendum A Records (Type 26) may be used. Multiple records occur when an item is presented electronically containing a Check Detail Addendum A Record (Type 26), returned electronically and then represented electronically containing a second Check Detail Addendum A Record (Type 26). This is the only use of a second Check Detail Addendum A Record (Type 26). Multiple Check Detail Addendum A Records (Type 26) should only be used when there are multiple presentments. Multiple Check Detail Addendum A Records (Type 26) should not be used to indicate both a BOFD and a return location in the same presentment.

  ⇒ Check Detail Addendum C Record (Type 28) – This typically includes subsequent endorsement information created by the endorsing bank, or from forward, or return files. This endorsement information

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may be obtained from a Return Addendum D Record (Type 35) when an item is received as a return and then re-deposited. Multiple Check Detail Addendum C Records (Type 28) may be used.

⇒ Return Record/Return Addendum B Record (Type 31/33) – This typically includes endorsement data created by the Paying Bank.

⇒ Return Addendum A Record (Type 32) – This typically includes BOFD endorsement data obtained from the original BOFD endorsement or the Check Detail Addendum A Record (Type 26). Multiple Return Addendum A Records (Type 32) may be used. Multiple Return Addendum A Records (Type 32) should only be used when there are multiple presentments.

⇒ Return Addendum D Record (Type 35) – This typically includes subsequent endorsement information created by the endorsing bank, or from forward, or return files. This endorsement information may be obtained from a Check Detail Addendum C Record (Type 28). Multiple Return Addendum D Records (Type 35) may be used.

- Alternate use of electronic endorsements when a Return Processing Bank is used:

⇒ The Return Location Routing Number identified in Check Detail Addendum A Record (Type 26) or Return Addendum A Record (Type 32) is the bank to which a return item is to be forwarded (even when it is not the actual BOFD). In order to facilitate an accurate and timely return of items destined for a Return Processing Bank, the following identifies the alternate use of Check Detail Addendum A Record (Type 26) or Return Addendum A Record (Type 32):

— These records should contain the routing number of the Return Processing Bank, if it is other than the actual BOFD. Use of this routing number as the BOFD will follow all uses previously described for the BOFD in these records. In effect, the Return Processing Bank becomes the BOFD.

⇒ In conjunction with the use of Check Detail Addendum A Record (Type 26) or Return Addendum A Record (Type 32) as described above, the following identifies the alternate use of the Check Detail Addendum C Record (Type 28) and Return Addendum D Record (Type 35):

— When used in conjunction with the Check Detail Addendum A Record (Type 26) or Return Addendum A Record (Type 32) to identify a Return Processing Bank that is not the actual BOFD, Check Detail Addendum C Record (Type 28) or Return Addendum D Record (Type 35) may contain the routing number of the actual BOFD into which the item was first deposited but not the bank to which the return will be sent. In this case, the Endorsing Bank Identifier (Field 11) in the Check Detail Addendum C Record (Type 28) or Return Addendum D Record (Type 35) should be set to '0' to indicate this is the actual BOFD and not a subsequent endorsing bank.

L.4 X9.100-180 and X9.100-140 Interaction of Endorsements

- When an item is converted from an original check to an electronic image, the physical endorsements printed prior to imaging are carried in the image contained in the Image View Data Record (Type 52).

- When an electronic image is reconverted to an IRD (per X9.100-140), both the physical endorsements from the image and the electronic endorsements from the Check Detail Addendum A Record (Type 26), Check Detail Addendum C Record (Type 28) or Return Record/Return Addendum B Record (Type 31/33), Return Addendum A Record (Type 32), and Return Addendum D Record (Type 35) records are printed on the IRD.

- When the IRD is converted to an electronic image, all previous endorsements (both physical and electronic) are carried in the image of the IRD contained in the Image View Data Record (Type 52).

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Annex M
(Informative)
Image Security Fields

M.1 Introduction to Digital Signature and Digital Certificate

Tampering with or alteration of image data can be detected by using the image security fields within Image View Detail Record (Type 50), Image View Data Record (Type 52) and Digital Certificate Record (Type 64), if used. This annex will explain the ways these fields may be used to convey image digital signatures and digital certificates. See the table below for all the fields related to Digital Signatures and Digital Certificates.

Digital Signatures insure the integrity of image data by computing a unique value from the image data called a hash value. This hash value is created using the algorithm specified in the Digital Signature Hash Function Method (Field 11) of an Image View Detail Record (Type 50). The hash value computed from the image data is then encrypted using the Digital Signature Cryptographic Algorithm Method (Field 12), DSA/RSA Key Size or ECC Curve Number (Field 13) of the Image View Detail Record (Type 50), and a private key known only to the creator of the image. The encrypted hash value is the Digital Signature (Field 23) of the Image View Data Record (Type 52).

In order to validate an image Digital Signature, the public key associated with the previously mentioned private key must be conveyed to the receiving party. In order to protect this public key from alteration or replacement, the public key is embedded in a Digital Certificate that is itself digitally signed by a trusted third party called a Certificate Authority. Other data elements are needed to establish who created the digital certificate (issuer), how long the certificate is valid (validity dates), who created the image (subject or owner), and other important information. Once the Digital Certificate has been verified using the issuer's public key, the digital certificate's public key may then safely be used to verify the ownership of a digital image using the image's digital signature. Invalid digital signatures imply digital certificate, or image alteration, or replacement.

This standard allows the Digital Certificate to be conveyed in the Image View Data Record (Type 52), or Digital Certificate Record (Type 64), or other methods external to this standard. The Digital Certificate is conveyed in a variety of ways as shown in M.3 below.

In order to validate an image, the Digital Signature is decrypted using the public key and compared to the recomputed image data hash value.

M.2 Fields Related to Digital Signature and Digital Certificate Conveyance

The following table shows all the record and fields related to the conveyance of Digital Signatures and Digital Certificates. Not all fields are used at all times. Acronyms are assigned to certain fields for use in later sections of this annex.

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Record	Field	Field Name	Acronym
50	10	Digital Signature Indicator	DSI
50	11	Digital Signature Hash Function Method	
50	12	Digital Signature Cryptographic Algorithm Method	
50	13	DSA/RSA Key Size or ECC Curve Number	
50	14	Digital Certificate Indicator	DCI
50 64	15 2	Digital Certificate Format	
50	16	Digital Certificate Conveyance Method	DCCM
50	17	Start of Protected Data	
50	18	Length of protected Data	
52	6	Security Originator Name	
52	7	Security Authenticator Name	
52	8	Security Key Name	
52	16	Length of Digital Signature	LDS
52 64	17 3	Length of Digital Certificate Issuer Distinguished Name	LDCIDN
52 64	18 4	Length of Digital Certificate Serial Number	LDCSN
52 64	19 5	Length of Digital Certificate	LDC
52	20	Length of Image Data	
52	23	Digital Signature	DS
52 64	24 6	Digital Certificate Issuer Distinguished Name	DCIDN
52 64	25 7	Digital Certificate Serial Number	DCSN
52 64	26 8	Digital Certificate	DC
52	27	Image Data	

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M.3 Digital Signature Uses and Associated Defined Field Values

The following table lists the types of uses and the defined field values for the fields listed in table M.2.

Defined Use	Fields (Acronym) within Image View Detail Record (Type 50), Image View Data Record (Type 52) and Digital Certificate Record (Type 64) from Table M.2								
	DSI	**DCI**	**DCCM**	**LDS**	**DS**	**LDC**	**DC**	**LDCIDN LDCSN**	**DCIDN DCSN[2]**
No Digital Signature	0	0	blank	'00000'	null[1]	'00000'	null[1]	'00000'	null[1]
Digital Signature/No Certificate	1	0	blank	'00001'-'99999'	Dig Sig	'00000'	null[1]	'00000'	null[1]
Digital Certificate in Type 52/Field 26	1	1	'00'	'00001'-'99999'	Dig Sig	'00001'-'99999'	Dig Cert	'00000' – '99999'	null[1] or DCIDN and DCSN
Digital Certificate in a 64 record	1	1	'01'	'00001'-'99999'	Dig Sig'	'00000'	null	'00001' – '99999'	DCIDN and DCSN
URI (Digital Certificate) or other method	1	1	'02'	'00001'-'99999'	Dig Sig	'00000'	null	'00001' – '99999'	URI (cert) or other

Note 1 – If the length of a variable length field (DS, DC, DCIDN, DCSN) is '00000' then the field is not present (null) in the record.

Note 2 – The fields DCIDN and DCSN are used together to uniquely identify the certificate needed to verify digital signatures.

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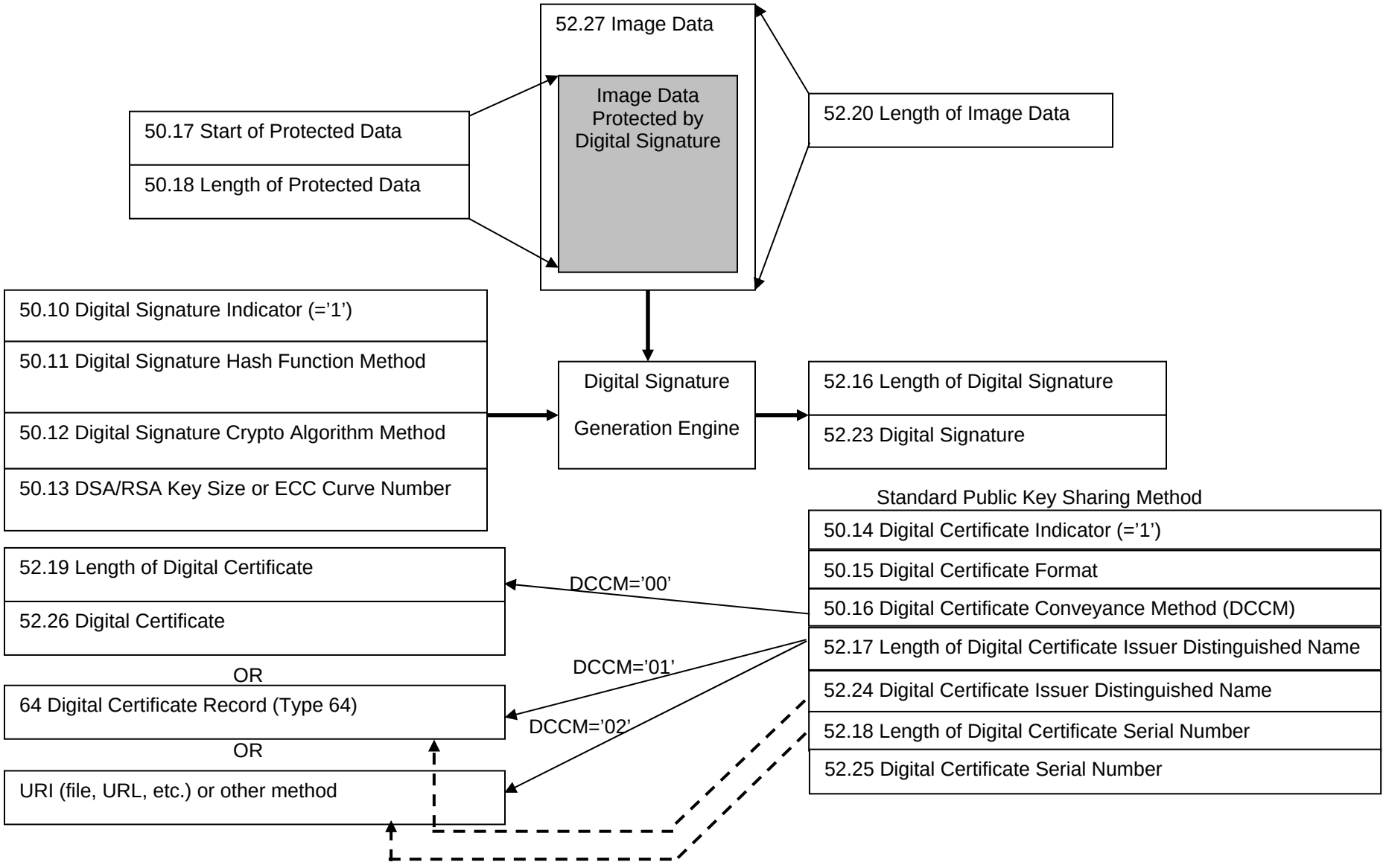
M.4 Preferred Methods for Digital Signature and Digital Certificate Creation



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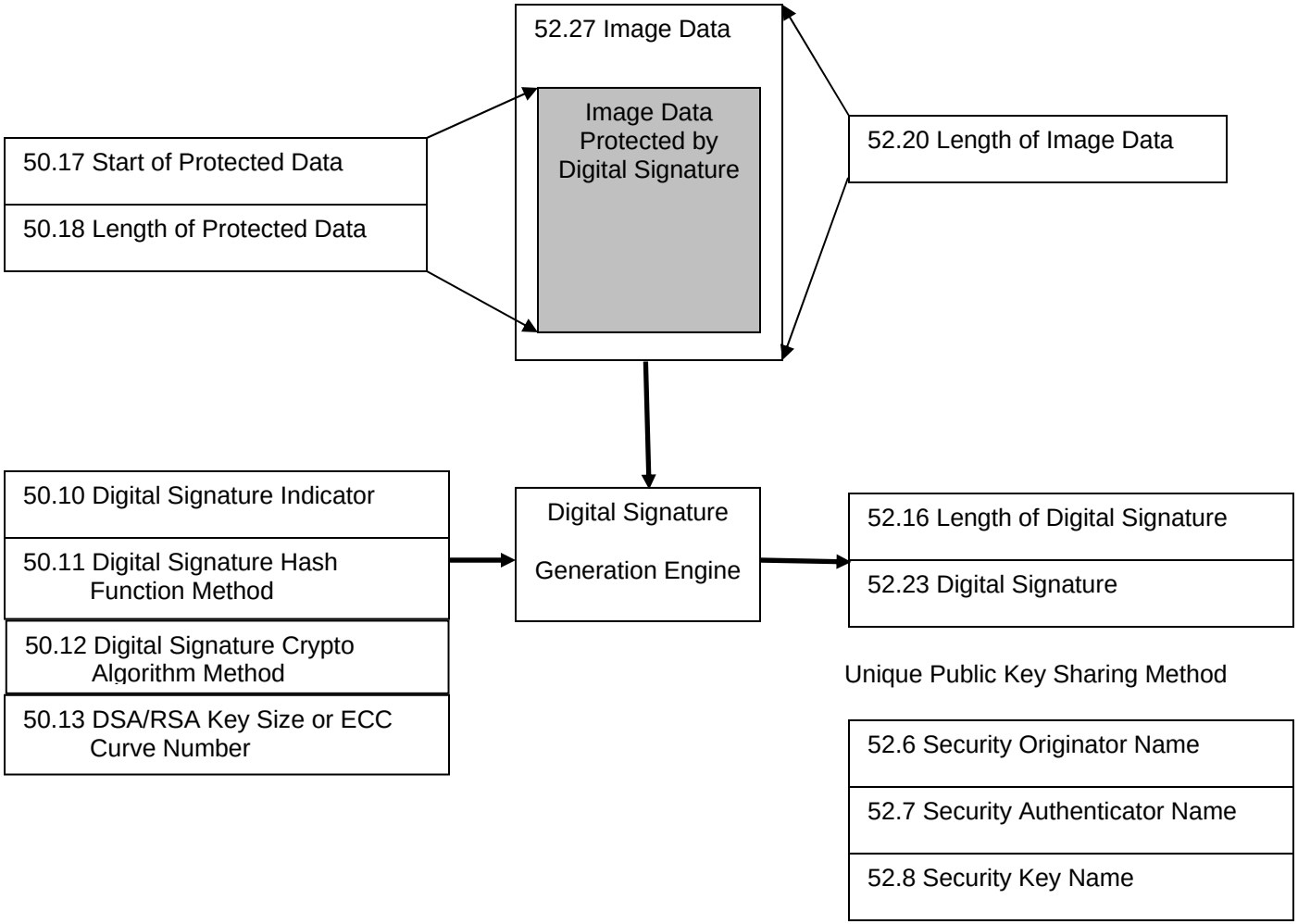
M.5 Alternate Method for Digital Signature Creation



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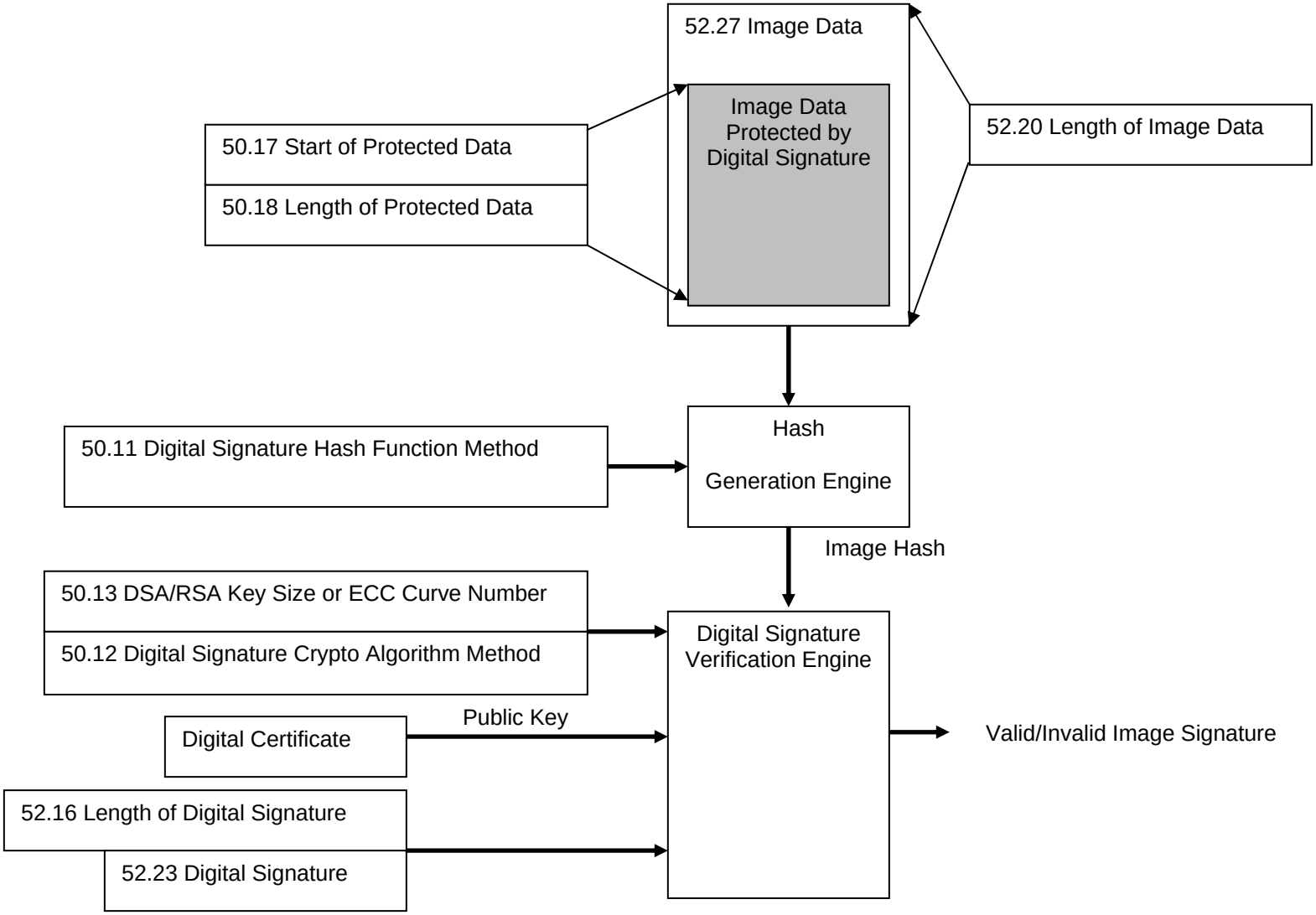
M.6 Digital Signature Verification



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Annex N
(Informative)
TIFF 6.0 Recommendations for Exchange

N.1 TIFF 6.0 (Tagged Image File Format) Recommendations for Exchange

The purpose of this Annex is to maximize interoperability among organizations using diverse platforms. To this end the following recommendations seek to establish the lowest common denominator by selecting values that essentially all vendors and applications can support with the least impact on the industry.

X9 intends to develop a new Part 2 to this standard which will establish required TIFF 6.0 tags and associated values to support the exchange of check images. This new work effort will turn the recommendations in this annex into industry requirements for exchange without agreements. The industry may require migration and/or conversion for some parties in the payment process to conform to this new Part 2. The new Part 2 will develop accepted methods and procedures to accommodate any identified key non conformances. This new Part 2 will be developed within the next twelve months.

N.1.1 Recommended Tags and Values

The following table specifies the tags and associated recommended values for black/white (Group 4) TIFF 6.0 images as defined and recommended by this Annex.

In order to create maximum compatibility with TIFF readers commonly used in the financial industry, TIFF writers should only use these tags and values when creating image views for exchange in an X9.100-180 file. As a minimum, TIFF readers should support the recommended tags and values in order to achieve maximum interoperability across diverse platforms. All tag numbers and related values are expressed in decimal notation.

Each TIFF image file as per this standard contains a single image view. Thus each TIFF image file must contain only one IFD (Image File Directory).

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N.1.2 Recommended Base and Optional Tag Values for TIFF 6.0 Black/White (G4) Image Exchange

Tag Name	Tag Number	Recommended Value(s)	Comment
ImageWidth	256	Note 1	
ImageLength	257	Note 1	Note 2
Compression	259	4 (Group 4 Fax - T.6)	
Photometric Interpretation	262	0	An image bit of 0 is imaged as white
StripOffsets	273	Note 1	This array will have only one entry
RowsPerStrip	278	Note 1	Note 2
StripByteCounts	279	Note 1	This array will have only one entry
XResolution	282	200/1 or 240/1	Note 3
YResolution	283	200/1 or 240/1	Note 3
The following tags need not be present since the default value equals the required value; however, if present, they must have the default value.			
NewSubfileType	254	0 (single image per TIFF file)	
BitsPerSample	258	1	
Thresholding	263	1 (no dithering or halftoning has been applied to image data)	
FillOrder	266	1	
Orientation	274	1	
SamplesPerPixel	277	1	
T6 Options	293	0 (no T6 options)	
ResolutionUnit	296	2 (inch)	

Note 1. This tag must have a value that is valid for the associated image data.

Note 2. All image views must be represented as a single strip. This means that the value of the "RowsPerStrip" tag must be equal to the value of the "ImageLength" tag.

Note 3. XResolution and YResolution tags must have identical values.

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N.1.3 Additional Optional Tags (not listed above)

TIFF readers should ignore extra tags that are present in TIFF files and not understood. There is no requirement to validate optional tags. However, if extra tags are validated and found to be poorly formed and/or contain syntax errors, the file should not be rejected unless there is an agreement between exchange parties to reject the file. This applies to both TIFF 6.0 baseline and TIFF 6.0 extension tags that are not required.

N.1.4 Private Tags

The TIFF 6.0 specification supports the use of private tags. Private tags are tags numbered 32768 or higher that are assigned to organizations that might wish to store information meaningful only to that organization. The use of TIFF private tags in financial image exchange environments is not recommended in order to avoid potential situations where TIFF readers may not handle private tags properly.

TIFF readers should ignore private tags that are present in TIFF files and not understood. There is no requirement to validate private tags. However, if private tags are validated and found to be poorly formed and/or contain syntax errors, the file should not be rejected unless there is an agreement between exchange parties to reject the file.

N.1.5 Byte Order

TIFF 6.0 writers are allowed to create image view files using either Little Endian or Big Endian byte order. The byte order is specified by the first two bytes in a TIFF 6.0 image view file. Little Endian is preferred.

TIFF 6.0 readers should handle both Little Endian and Big Endian byte order.

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Annex O
(Informative)
Differences Between DSTU X9.37 and This Standard

O.1 Background

The original ANS X9.37 was approved in 1994 it was not widely used until 1999 when SVPCO mandated its use. Draft versions of the standard were also in use during this time. At the five-year review in 2001, minor changes were made. These early standards supported only Electronic Check Exchange without images.

The Draft Standard for Trial Use was approved in 2003 as DSTU X9.37-2003. The original ANS X9.37 was modified to support image cash letters in addition to Electronic Check Exchange to accommodate changing industry needs. As a result the DSTU X9.37 supported both forward presentment and returns with Electronic Check Exchange data and image data linked. It allowed for files that contained only Electronic Check Exchange data, or files that contained both Electronic Check Exchange and image data. The standard supported image truncation. In the DSTU, the standard's group minimized major format changes and maintained User Fields in their original location.

The approved DSTU X9.37, which supports image projects, Check 21, and Electronic/Image exchanges, is currently being used by all the major image exchanges.

O.2 Changes

The ANS X9.100-180-2006 is the new number for the Specifications for Electronic Exchange of Check and Image Data. This standard has significant changes from the DSTU.

Minor changes were made to the Scope, Purpose and Application Clauses of the standard. Definitions were updated to conform to ANS X9.100. New definitions accommodate Digital Certificates; a definition for Greenwich Mean Time was added. Hierarchy Diagrams were updated to reflect the new records and record structure.

The Character and Field Data Type Specifications include more extensive changes by completely revising these specifications. In addition all fields in the standard were reviewed and updated as needed with the new Data Types. Some modifications accommodated COBOL programs. All numeric conditional fields became numericblank (NB). All MICR fields are right justified and blank filled. A new data type, ANC (Alphanumeric Comma Delimited), was added with associated rules and examples of its use in Annex E. Special MICR fields are specifically identified. A Data Type was defined for questionable data. Exceptions for justification and fill were eliminated from the standard. Two tables are included in the standard to aid in understanding Character and Field Data Type Specifications.

All Routing Number Fields have been changed to nine digits. The MICR check digit field has been deleted. The Data Type for Routing Fields was changed from Numeric (N) to Numericblank/dash (NBD), so that a blank/space can be used if there is no check digit. Changes were made to accommodate the U.S. Routing Number format of "Four - Dash - Four" and the Canadian format of "Five - Dash - Three".

In the File Header Record (Type 01) the File Type Indicator (Field 3) was changed to allow for non-financial files. In the File Header Record and for all time and date fields, a default of GMT is specified with the allowance to use local time or a specific time zone by clearing arrangements.

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Additional values were added to the Collection Type Indicator (Field 2) in both the Cash Letter Header Record (Type 10) and Bundle Header Record (Type 20) for deposit and non-monetary returns. Additional codes were also added for Canadian use. The Work Type (Field 13) in the Cash Letter Header Record (Type 10) was expanded to two digits to provide for additional codes for the Federal Reserve, private sector and Canadian use.

In the Bundle Header Record (Type 20) a Bundle Creation Time was added. The Return Location Routing Number (Field 10) in the Bundle Header Record (Type 20) can be used for return processing, but if the Check Detail Addendum B Record (Type 26) is present, it takes precedence over this field.

The use of dashes and spaces in the fields in the Check Detail Record (Type 25) is determined by the exchange partners.

A Magnetic Read Indicator field that indicates whether or not MICR data was read with Magnetic read technology was added to the Check Detail Addendum A Record (Type 26), Check Detail Addendum C Record (Type 28), Return Addendum A Record (Type 32) and Return Addendum D Record (Type 35).

In the Check Detail Addendum A Record (Type 26), the name of the Routing Number field was changed to Return Location Routing Number to allow for consolidated return processing. It was clarified that multiple Check Detail Addendum A Records can be used only when an item is represented. Additional or updated descriptions were made to the Deposit Account Number at BOFD (Field 6), Truncation Indicator (Field 9) and BOFD Conversion Indicator (Field 10)

The Check Detail Addendum B Record (Type 27) and Return Addendum C Record (Type 34) in the DSTU X9.37, which conveyed archive information, have been totally revamped. The Records have been expanded to include unparsed MICR information. Previously, these records allowed for two record formats, one fixed and one variable; now there is only one variable record format. The variable length archive field was maintained, and a new field Image Capture Time was added to the records. Variable length Captured Unparsed Data was added for MICR High/Low Reads and Corrected Data. A variable length User Field was also added.

In the Check Detail Addendum C Record (Type 28) and Return Addendum D Record (Type 35), an Endorsing Bank Identifier (Field 11) was added to define the endorser's role in processing of the check (i.e., Depositary, Collecting, Returning or Payor Bank). The Deposit Account at BOFD was added to accommodate the alternate use of the Check Detail Addendum A Record (Type 26) for Return Processors. Additional or updated descriptions were made in the introductory paragraph, Truncation Indicator (Field 6) and Endorsing Bank Conversion Indicator (Field 7).

Return Reason Codes were expanded to two digits. The original alpha codes were maintained; new exchange codes and meta codes were added. The Return Reason values were moved to an Annex that includes the code, return reason and short name for IRD usage.

Return Record (Type 31) and Return Addendum B Record (Type 33) must now occur as a pair. The Return Record (Type 31) mirrors the format of the Check Detail Record (Type 25) to make it easier to move data from forward processing to return processing and vice versa. These two records have been totally revamped as to content and layout, but have maintained the 80-byte record length. All MICR fields are now contained in the Return Record (Type 31), which includes the Aux On-Us field that was moved from the Return Addendum B Record (Type 33). Return reason code and other Payor Bank information fields have been moved to the Return Addendum B Record (Type 33).

Instruction was added that fields received electronically be transferred to corresponding fields in the Return Record (Type 31) and Return Addendum A Record (Type 32). In the Return Addendum A Record (Type 32), question marks will be used instead of asterisks to indicate questionable data.

In the Return Addendum B Record (Type 33), an additional Return Reason was added to provide a second return reason. The Return Reason codes are consistent for both fields. A field for the Number of Times Returned was added. Traditionally and by industry practice, one representment of a physical check is allowed. The Number of Times

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Returned field allows institutions to track the number of times an item is returned, but the institution must link the transaction history to update this field.

No significant changes were made to Account Totals Record (Type 40) and Non-Hit Totals Record (Type 41).

In the Image View Detail Record (Type 50), the Image View Type (Field 7) indicator now includes Black and White, Grayscale, Color and Other. Six fields were added dealing with Digital Signatures and Digital Certificates. New fields replaced the Digital Signature Method and Security Key Size fields. New fields Image Capture Time (Field 21) and Image Test Override Indicator (Field 20) were added. Additional or updated descriptions were made in the introductory paragraph, Image Indicator (Field 2), Image View Format indicator (Field 5) and Image View Compression Algorithm Identifier (Field 6).

The record layout of the Image View Data Record (Type 52) was reorganized to better accommodate variable length fields. The length fields for variable fields are grouped prior to the first variable data. Digital Certificate fields and Ancillary Data fields were also added to the record.

No significant changes were made to the Image View Analysis Record (Type 54). However, it is recommended to use the Image Test Summary Record (Type 55) and Image Test Detail Record (Type 56), since the standard developers plan to remove this record at the next revision.

In all the control records, fields were added to accommodate credits.

O.3 New Records

New functionality required development of new records.

A significant amount of work on image quality by the FSTC and X9B15 led to the development of flexible and, more comprehensive quality records. The Image Test Summary Record (Type 55) and Image Test Detail Record (Type 56) were created. These two records must occur together for a single view. One Image Test Summary Record (Type 55) to one or multiple Image Test Detail Records (Type 56) is allowed. The new records allow grouping of tests having common attributes. The Image Test Summary Record (Type 55) allows for the test identification information, summary results and overall pass/fail for a group of tests. The Image Test Detail Record (Type 56) reflects individual tests and is structured to accommodate specific test data. Multiple groupings of these records can occur with each pair of Image View Detail Record (Type 50) and Image View Data Record (Type 52). Test methods must be registered with X9.

The Credit/Reconciliation Record (Type 61) was added and simulates the MICR line of a credit or adjustment ticket with additional parameters. The format mirrors a Check Detail Record. The Credit/Reconciliation record can occur within the file, within a Cash Letter or Bundle or at the end of all associated item transaction records. A flag specifies the type of credit or adjustment being defined. The Credit/Reconciliation Record (Type 61) accommodates deposit slips for Remote Deposit Capture, Branch Capture, Corporate Cash Letters, Internal Capture and ATMs. Credit-only files are possible and may be useful for merger activity and internal accounting. This record can be a virtual deposit slip (with no associated images) and can be used as credit first or credit last with debits allowed to cross bundles. It can also be used as a Credit or Debit Adjustment. Fields in the record allow for the identification of the Type of Account into which funds identified in this record is being made and the Source of Work that this record represents.

The new Digital Certificate Record (Type 64) will contain the X.509 Digital Certificate to convey the public key for verification of Digital Signatures. Using this record eliminates the need to repeat the certificates for every image view. Multiple records are permitted, and it is recommended to insert this record as close to beginning of the file as possible. The records can be used to build a table of certificates for all items in the file. The record contains the same Digital Certificate information that can be carried in the Image View Detail Record (Type 50) and Image View Data Record (Type 52).

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The User Record (Type 68) provides a defined record type that can be used in a free form variable format. The record can be used anywhere between the File Header Record (Type 01) and the File Control Record (Type 99). It can occur as many times as needed. The standard developed two predefined User Records: a Payee Endorsement Record and a Destination Record.

O.4 Annexes

Some annexes from the DSTU X9.37 were maintained, some were modified, some deleted and new annexes were added. Annexes A, B, C, E, F and G are Normative and part of the standard. Annexes H, I, J, K, L, M, N and O are Informative and are not part of the standard.

Annex A – Standard On-Us Field Format had wording changes for dashes and spaces.

Annex B – Relationship of Cash Letter Record Type Indicator and Cash Letter Documentation Type Indicator had minor corrections.

Annex C – Image Record Definition for Image View Not Present was changed to reflect changes in Image View Detail Record (Type 50) and Image View Data Record (Type 52).

Annex D – Variable Length Record File had wording changes and additional examples for Big Endian and Little Endian.

Annex E – Rules for Using ANC Data Type, a new Annex, explains ANC (Alphanumeric/comma delimited) usage and provide examples of ANC use.

Annex F – Image Format and Compression Combination, a new Annex, shows allowable combinations between the Image View Format Indicator (Field 5) and Image View Compression Algorithm Identifier (Field 6) in the Image View Detail Record (Type 50).

Annex G is new and contains the Return Reason Codes. The codes have been significantly expanded.

Annex H – Image Record Definitions had minor wording changes.

Annex I – MICR Valid Indicator had no changes.

Annex J – Examples of Electronic Exchange File Structures, eliminated some examples, reduced other examples and does not necessarily show examples of all file structures.

Annex K – Image Keys had minor wording changes and eliminated the discussion on Image Archive Sequence Number since it was eliminated from the formats.

Annex L – Endorsements had some wording changes and additional discussion on using endorsements when using a return consolidator.

Annex M – Image Security Fields, new Annex, explains the use of Digital Signature and Digital Certificate using words, tables and diagrams.

Annex N – TIFF 6.0 Recommendations for Exchange, new annex, provides recommendations for TIFF 6.0 (Tagged Image File Format) and allows for both Big and Little Endian.

Annex O - Differences Between DSTU X9.37 and This Standard, a new Annex, provides an overview of the differences between the DSTU and the standard.

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