International Standard

ISO/IEC 15434

Fifth edition
2025-01

Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media

Technologies de l'information — Techniques automatiques d'identification et de capture des données — Syntaxe pour supports de CAD à haute capacité

Reference number
ISO/IEC 15434:2025(en)

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Published in Switzerland

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

ISO and IEC draw attention to the possibility that the implementation of this document may involve the use of (a) patent(s). ISO and IEC take no position concerning the evidence, validity or applicability of any claimed patent rights in respect thereof. As of the date of publication of this document, ISO and IEC had not received notice of (a) patent(s) which may be required to implement this document. However, implementers are cautioned that this may not represent the latest information, which may be obtained from the patent database available at www.iso.org/patents and https://patents.iec.ch. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 31, *Automatic identification and data capture techniques*.

This fifth edition cancels and replaces the fourth edition (ISO/IEC 15434:2019), which has been technically revised.

The main changes are as follows:

— format “14” has been assigned to data structured with JSON syntax (see 5.3.2.16 and 5.4.15);

— format “15” has been assigned to data containing an ISO/IEC 20248 verifiable data construct (see 5.3.2.17 and 5.4.16);

— Annex B has been added to provide examples of syntax used to encode data into high-capacity ADC media.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

This document defines the manner in which data is transferred to high-capacity automatic data capture (ADC) media from a supplier's information system and the manner in which data is transferred to the recipient's information system. It does not define the internal data storage format for specific high-capacity ADC media. This document does not specify the application of data structures provided by a specific data syntax format. The application of the data structure may be specified by industry conventions.

Users of automatic identification and data capture (AIDC) techniques benefit by being able to receive data in a standard form and by being able to provide data in a standard form. Low capacity ADC media, such as linear bar code symbologies and optical character recognition, typically encode a single field of data. Most applications of these technologies involve the encoding of a single field of data by the supplier of the medium and the subsequent decoding of the data field by the recipient. Encoding single fields of data permits the supplier to perform the encoding from a single field within the supplier's information system. Decoding single fields of data permits the recipient to input this data into a single field in the recipient's information system, in lieu of key entry.

High-capacity ADC media, such as two-dimensional symbols, RFID transponders, contact memories and smart cards, encode multiple fields of data. These multiple fields are usually parsed by the recipient's information system and then mapped to specific fields of data in the recipient's information system. This document defines the syntax for high-capacity ADC media, so as to enable ADC users to utilize a single mapping utility, regardless of which high-capacity ADC medium is employed.

The benefits of using high-capacity ADC media come with challenges. The ability to convey both data and meaning (e.g. assuming an encoded serial number is "12345"; "12345" is the data and the understanding "12345" is a serial number is the meaning) within a single technology has been executed differently by many industries in a variety of ways. The widespread use of these different data and meaning formats has led to an additional challenge of identifying which format is being used. To address this challenge, this document assigns many of the data and meaning formats a unique two-digit number called a format indicator which identifies the data structure for the encoded data. These format indicators enable a user to employ one or more formats within a single high-capacity ADC media and accurately decode the data stream.

This document defines a syntax to indicate the message encoded in the high-capacity ADC media conforms to this document. Its defined syntax also indicates which data format or formats are being used to provide data and meaning. The purpose of the syntax is to provide a mechanism for an automated information system consuming data through high-capacity ADC media to adaptively interpret and parse the data meaningfully.

Information technology — Automatic identification and data capture techniques — Syntax for high-capacity ADC media

1 Scope

This document specifies a transfer structure, syntax, coding of messages and data formats when using high-capacity automatic data capture (ADC) media.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO/IEC 646, *Information technology — ISO 7-bit coded character set for information interchange*

ISO/IEC 19762, *Information technology — Automatic identification and data capture (AIDC) techniques — Harmonized vocabulary*

ISO/IEC 21778, *Information technology — The JSON data interchange syntax*

ISO/IEC 20248, *Information technology — Automatic identification and data capture techniques — Digital signature data structure schema*

ANS MH10.8.2, *ASC MH 10 Data Identifiers and Application Identifiers*

ANS X12, *Electronic Data Interchange*

CII Syntax Rule (Vers 3.00), CII Syntax Rule Specifications (3.00) (Electronic Data Interchange — Japan)

GS1 General Specifications Standard

Airlines for America, *ATA Common Support Data Dictionary (CSDD)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19762 apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

4 Documentation notation conventions

This document uses the following typographical conventions in message examples.

a) **BOLD**: Text that shall be entered exactly as it appears. (In this document, $^{F}_{S}$, $^{G}_{S}$, $^{U}_{S}$, $^{R}_{S}$, $^{E}_{O}T$ are used to represent non-printable characters. The ISO/IEC 646 representation of non-printable characters that shall be used and is used in this document can be found in Annex A.)

b) *italic, lower case*: Variable parameters. The user shall supply an appropriate value. In some cases, default values are recommended in this document.

Non-printable characters in accordance with Annex A shall be used. These come from the ISO/IEC 646 set of characters and are as follows.

— $^{R}_{S}$, where the two-letter couplet, superscript R (i.e. ^{R}) and subscript S (i.e. $_{S}$), collectively represents a single non-printable format trailer character called record separator. The character $^{R}_{S}$ is encoded as a single byte of decimal value 030 (equivalently hexadecimal value 1E).

— $^{G}_{S}$, where the two-letter couplet, superscript G (i.e. ^{G}) and subscript S (i.e. $_{S}$), collectively represents a single non-printable data element separator character called group separator. The character $^{G}_{S}$ is encoded as a single byte of decimal value 029 (equivalently hexadecimal value 1D).

— $^{F}_{S}$, where the two-letter couplet, superscript F (i.e. ^{F}) and subscript S (i.e. $_{S}$), collectively represents a single non-printable segment terminator character called field separator. The character $^{F}_{S}$ is encoded as a single byte of decimal value 028 (equivalently hexadecimal value 1C).

— $^{U}_{S}$, where the two-letter couplet, superscript U (i.e. ^{U}) and subscript S (i.e. $_{S}$), collectively represents a single non-printable sub-element separator character. The character $^{U}_{S}$ is encoded as a single byte of decimal value 031 (equivalently hexadecimal value 1F).

— $^{E}o_{T}$ where the three-letter triplet, superscript E (i.e. ^{E}), small o (same font size, lower case o) and subscript T (i.e. $_{T}$), represents a single non-printable message trailer character called end of transmission. The character $^{E}o_{T}$ is encoded as a single byte of decimal value 04 (equivalently hexadecimal value 04).

NOTE If the literal letters RS, GS, FS, US or EoT were encoded in the data string, the resultant data would be in error, and would not be in conformance with this document. In an application built according to this document, such a data string would not be decoded, parsed or interpreted correctly.

In the following ISO/IEC 15434 message example, the non-printable characters are visually displayed as shown above; **[)>**$^{R}_{S}$**06**$^{G}_{S}$**25SUN98765432187654321A2B4C6D8E**$^{R}_{S}{}^{E}o_{T}$.

Each non-printable character is encoded according to its decimal or hexadecimal value (listed above and in Annex A), not according to the value for the individual letters. When they are decoded, and visual characters are used to represent the non-printable characters, they sometimes do not appear as shown in this document.

5 Message format

5.1 General

This clause defines how data shall be transferred from a high capacity ADC media reading device to the user's application software.

To allow multiple data formats to be contained within a data stream, a two-level structure of enveloping is employed. The outermost layer of the message is a message envelope that defines the beginning and end of the message. Within the message envelope, there is one or more format envelopes that contain the data (see Figure 1). Multiple formats in a single message should only be employed with bilateral agreement of the trading partners.

The message envelope shall consist of

— a message header,

— one or more format envelope(s), and

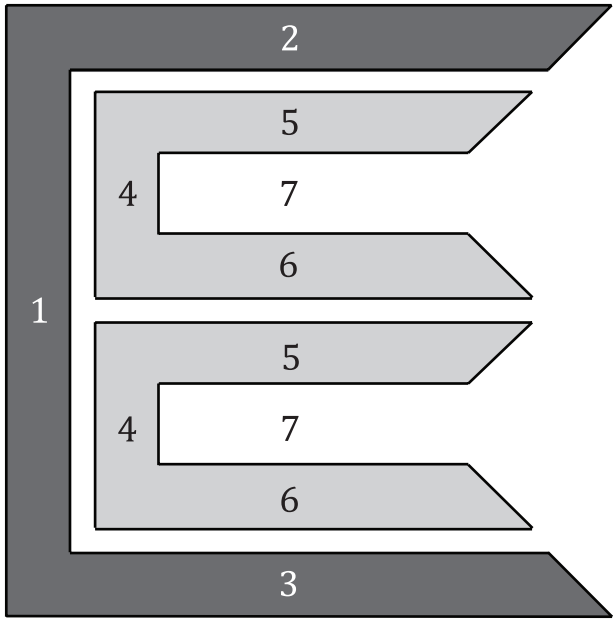
— a message trailer (when required).

Each format envelope within the message envelope shall consist of

— a format header,

— data, formatted according to the rules defined for that format, and

— a format trailer (when required).



Key

1 message envelope (see 5.2.1)
2 message header (see 5.2.2)
3 message trailer (see 5.2.3)
4 format envelope (see 5.3.1)
5 format header (see 5.3.2)
6 format trailer (see 5.3.3)
7 formatted data (see 5.4)

Figure 1 — Enveloping structure

5.2 Message envelope

5.2.1 General

The message envelope defines the start and end of the data contained within the data stream and provides the following functions:

— indicates that the message contained within this media is formatted in conformance with the rules of this document;

— indicates the character which has been defined to separate formats within this message;

— provides a unique character to indicate the end of the message.

The structure within a data stream is as follows:

a message, containing one or more formats;

a format, containing one or more segments;

a segment, containing one or more data elements;

a data element (field), potentially containing one or more sub-elements (sub-fields).

5.2.2 Message header

5.2.2.1 General

The message header consists of two parts:

— the three-character conformance indicator, and

— the format trailer character.

The complete message header is: **[)>**$^{R}_{S}$

5.2.2.2 Conformance indicator

The conformance indicator shall be the first three characters in the message header. It shall be **[)>** (left bracket, right parenthesis and greater than). See Annex A for a table of decimal and hexadecimal values used for characters in this document.

5.2.2.3 Format trailer character

The format trailer character shall be the fourth character in the message header. It shall be the non-printable character "$^{R}_{S}$" (see Annex A). The format trailer character is used throughout the message to indicate the end of a format envelope (see 5.3.3).

5.2.3 Message trailer

The message trailer identifies the end of the message within the data stream. It shall be the end of transmission character, "$^{E}o_{T}$" (see Annex A). The message trailer character shall not be used elsewhere in the message except in format "09" (binary data) where the "$^{E}o_{T}$" character can appear.

The message trailer shall not be used with formats "02" (complete EDI message / transaction) and "08" (structured data using CII syntax rules).

5.3 Format envelope

5.3.1 General

The format envelope defines the start and end of data in a given format. The format envelope provides the following functions:

— identifies the data format used within the envelope;

— defines the character(s) used to separate the segments, data elements (fields) and sub-elements (sub-fields) within this data format;

— indicates any applicable date, release or control information.

An example message for each format is provided in Annex B.

5.3.2 Format header

5.3.2.1 General

A format header shall consist of:

— a format indicator (a two-digit numeric identifier which identifies the rules governing the format);

— variable header data (if any) which defines the separators used, the version, the release, and the date or control information of the applicable standards.

Table 1 lists the format indicators and variable data associated with each format header.

Table 1 — Format header table showing associated separators

Format indicator	Variable header data	Format trailer	Format description
00			Reserved for future use
01	$^{G}_{S}vv$	$^{R}_{S}$	Transportation
02			Complete EDI message / transaction
03	$vvvrrr\ ^{F}_{S}{}^{G}_{S}{}^{U}_{S}$	$^{R}_{S}$	Structured data using ANSI ASC X12 segments
04	$vvvrrr\ ^{F}_{S}{}^{G}_{S}{}^{U}_{S}$	$^{R}_{S}$	Structured data using UN/EDIFACT segments
05	$^{G}_{S}$	$^{R}_{S}$	Data using GS1 application identifiers
06	$^{G}_{S}$	$^{R}_{S}$	Data using ASC MH10 data identifiers
07		$^{R}_{S}$	Free form text
08	*vvvvrrnn*		Structured data using CII syntax rules
09	$^{G}_{S}ttt...t^{G}_{S}ccc...c^{G}_{S}nnn...n^{G}_{S}$	$^{R}_{S}$	Binary data
10 to 11			Reserved for future use
12	$^{G}_{S}$	$^{R}_{S}$	Structured data following text element identifier rules
13			Blocked for use to avoid conflict with ISO/IEC 15961-2
14	$aaa...a^{G}_{S}$	$^{R}_{S}$	Data using JSON syntax
15	$nnn...n^{G}_{S}$	$^{R}_{S}$	ISO/IEC 20248 verifiable data construct
16 to 99			Reserved for future use

Key

vv	two-digit version of format "01" being used (see 5.4.3.1)
$^{R}_{S}$	format trailer character (see 5.3.3)
$^{F}_{S}$	segment terminator (see 5.3.2.2.2)
$^{G}_{S}$	segment terminator (see 5.3.2.2.2)
$^{U}_{S}$	sub-element separator (see 5.3.2.2.4)
vvvrrr	three-digit version (*vvv*) followed by the three-digit release (*rrr*) (see 5.3.2.6 and 5.3.2.7)
vvvvrrnn	four-character version (*vvvv*) followed by the two-character release (*rr*) followed by the two-character edition indicator (*nn*) (see 5.3.2.11)
ttt...t	file type name (see 5.3.2.12)
ccc...c	compression technique name (see 5.3.2.12)
nnn...n	number of bytes (see 5.3.2.12 and 5.3.2.17)
aaa...a	application name (see 5.3.2.16)
NOTE	ASC MH10 data identifiers were previously known as FACT data identifiers.

5.3.2.2 Separators and terminators

5.3.2.2.1 General

The separators and terminators are an integral part of the data stream. The separator and terminator characters shall not be used in non-binary data elsewhere in the message. For binary data strings (format "09"), special considerations apply (see 5.3.2.12).

5.3.2.2.2 Segment terminator

Each segment in format "03" and "04" shall be terminated by the segment terminator character, the non-printable character "$^{F}_{S}$" (see Annex A).

5.3.2.2.3 Data element separator

Data elements in formats “01”, “03”, "04", “05”, "06", "09", "12", "14" and “15” shall be separated by the data element separator and the non-printable character “$^{G}_{S}$” (see Annex A).

5.3.2.2.4 Sub-element separator

Sub-elements in formats “03” and "04" shall be terminated by the sub-element separator character, the non-printable character “$^{U}_{S}$” (see Annex A).

5.3.2.3 Format header “00” — Reserved format

The format header “00” is reserved for future use.

5.3.2.4 Format header “01” — Transportation

The format header shall be represented as

01$^{G}_{S}$*vv*

where

$^{G}_{S}$ is the data element separator to be used between data elements;

vv represents the two-digit version as given in 5.4.3.1.

5.3.2.5 Format header “02” — Complete EDI message / transaction

The format header shall be represented as

02

There is no variable header data for this format header (see 5.4.4).

5.3.2.6 Format header “03” — Structured data using ASC X12 segments

The format header shall be represented as

03*vvvrrr* $^{F}_{S}{}^{G}_{S}{}^{U}_{S}$

where

vvvrrr represents the three-digit version *(vvv)* and three-digit release *(rrr)* indicator used in ASC X12;

$^{F}_{S}$ is the segment terminator to be used to indicate the end of an EDI segment;

$^{G}_{S}$ is the data element separator to be used between EDI data elements;

$^{U}_{S}$ is the sub-element separator to be used between EDI sub-elements in a composite data element.

Format header “03” shall employ ANSI ASC X12 segments, as specified in ANS X12, used in North America. For international trade, format header “04” should be used.

NOTE Format “03” is common for EDI exchange between trading partners in North America.

5.3.2.7 Format header “04” — Structured data using UN/EDIFACT segments

The format header shall be represented as

04*vvvrrr* $^{F}_{S}{}^{G}_{S}{}^{U}_{S}$

where

vvvrrr represents the three-digit version *(vvv)* and three-digit release *(rrr)* indicator for the UN/EDIFACT level used;

$^{F}_{S}$ is the segment terminator to be used to indicate the end of an EDI segment;

$^{G}_{S}$ is the data element separator to be used between EDI data elements;

$^{U}_{S}$ is the sub-element separator to be used between EDI sub-elements in a composite data element.

5.3.2.8 Format header "05" — Data using GS1 application identifiers

The format header shall be represented as

05$^{G}_{S}$

where $^{G}_{S}$ is the data element separator to be used between data fields.

5.3.2.9 Format header "06" — Data using ASC MH 10 data identifiers

The format header shall be represented as

06$^{G}_{S}$

where $^{G}_{S}$ is the data element separator to be used between data fields.

5.3.2.10 Format header "07" — Free form text data

The format header shall be represented as

07

There is no variable header data for this format header (see 5.4.9).

5.3.2.11 Format header "08" — Structured data using CII syntax rules

The format header shall be represented as

08*vvvvrrnn*

where *vvvvrrnn* represents the four-character version *(vvvv)*, two-character release *(rr)* and two-character edition *(nn)* indicator for the CII level used. This equates to the BPID in CII syntax rules (see 5.4.10).

Format header "08" shall employ CII syntax rules, as specified in CII Syntax Rule Specifications, used in Japan. For international trade, format header "04" should be used.

NOTE Format "08" is intended for use within Japan only.

5.3.2.12 Format header "09" — Binary data

The format header shall be represented as

09$^{G}_{S}$*ttt…t*$^{G}_{S}$*ccc…c*$^{G}_{S}$*nnn…n*$^{G}_{S}$

where

$^{G}_{S}$ is the data element separator to be used between fields in this header and at the end of the last data field.

ttt...t represents the identification of the binary file type, e.g. JPEG, TIFF, PCX, BMP, CSV, CGM, GIF. This field is a variable length of 1 to 30 characters (including version if applicable). This field shall be terminated by the "$^{G}_{S}$" character. The binary file type and the means by which to represent the binary file type should be mutually agreed upon between the trading partners.

ccc...c represents the compression technique employed. This field is a variable length of 0 to 30 characters. If no compression is used, this field shall be left blank. In any case, this field shall be terminated by the "$^{G}_{S}$" character. The compression technique and the means by which to represent the compression technique should be mutually agreed upon between the trading partners.

nnn...n represents the number of bytes in the binary message. This field is a variable length field of 1 to 15 digits. The count does not include the length of the data format header or the data format trailer. This field shall be terminated by the "$^{G}_{S}$" character, which is not part of the byte count.

5.3.2.13 Format headers "10" to "11" — Reserved formats

Format headers "10" to "11" are reserved for future use.

5.3.2.14 Format header "12" — Data using text element identifiers

The format header shall be represented as

12$^{G}_{S}$

where $^{G}_{S}$ is the data element separator to be used between data fields.

5.3.2.15 Format header "13" — Reserved format

Blocked for use to avoid conflict with ISO/IEC 15961-2.

5.3.2.16 Format header "14" — Data using Java Script Object Notation (JSON) syntax

The format header shall be represented as

14*aaa...a*$^{G}_{S}$

where

aaa...a represents a target application name expected to process the JSON data. This may be seen as a file name or a URL. The application name should be mutually agreed upon between trading partners. This optional data is variable length from 0 to 1024 characters and shall only contain printable characters shown in Annex A.

$^{G}_{S}$ is the data element separator to be used between data fields.

5.3.2.17 Format header "15" — ISO/IEC 20248 verifiable data construct

The format header shall be represented as

15*nnn...n*$^{G}_{S}$

where

nnn...n represents the number of bytes in the binary message forming the ISO/IEC 20248 raw envelope.

$^{G}_{S}$ is the data element separator to be used between data fields.

5.3.2.18 Format headers “16” to“99” — Reserved formats

Format headers “16” to “99” are reserved for future use.

5.3.3 Format trailer

The format trailer identifies the end of a format envelope. The format trailer shall consist of the format trailer character, the non-printable character “$^{R}_{S}$” (see Annex A). The format trailer character shall not be used in non-binary data elsewhere in the message.

The format trailer shall not be used with formats “02” and “08”.

5.4 Data format

5.4.1 General

Within a given format envelope, the data shall be formatted using one and only one of the following methods:

— transportation;

— complete EDI message / transaction (ASC X12, UN/EDIFACT or CII standard);

— structured text (ASC X12 or UN/EDIFACT subset);

— data structured using the rules of GS1 application identifiers;

— data structured using the rules of ASC MH 10 data identifiers;

— free form text;

— CII message record without message group header and trailer;

— binary data;

— data structured using the rules of text element identifiers;

— data structured using JSON syntax;

— ISO/IEC 20248 verifiable data construct.

If more than one format is included in a message, format “01”, if used, shall be the first format in the message.

5.4.2 Format “00” — Reserved

This format is reserved for future use.

5.4.3 Format “01” — Transportation

5.4.3.1 General

Format “01” consists of two areas: the first is mandatory data which is common to all carrier sortation and tracking applications, the second area is optional data which can be useful to specific applications between trading partners.

The organization controlling the data structure within this format is identified through the version indicator in the format header. At the time of publication of this document, the following versions have been identified:

— version "02" formatted according to the rules of ASC MH10/SC 8 (using measurement qualifiers of pounds ["LB"] and kilograms ["KG"]);

— version "06" formatted according to the rules of the International Air Transport Association (IATA);

— version "56" formatted according to the rules of International Federation of Freight Forwarders Associations (FIATA);

— version "96" formatted according to the rules of ASC MH10/SC 8 (using measurement qualifier of pounds ["LB"] only).

5.4.3.2 Format "01" version "02"

5.4.3.2.1 Mandatory data

This data is required within version "02" of the "01" format. The following data elements shall be ordered as listed below, immediately following the format header. Each data element is defined as either fixed or variable length. Where fields are variable in length, the minimum field length and the maximum field length (min...max) are shown below. All fields are separated by the data element separator character ("$^{G}_{S}$") (see Annex A) defined in the format header.

Ship to postal code	(an 00...11)
Ship to country code (ISO 3166-1)	(n 03)
Class of service (assigned by carrier)	(an 01...03)
Tracking number (controlled by carrier)	(an 01...20)
Origin carrier standard carrier alpha code (SCAC)	(an 02...04)

SCAC of the carrier intended to transport the package

The recommended class of service is three digits of numeric data.

5.4.3.2.2 Optional data

There are nine optional data elements. Optional data elements, if used, shall immediately follow mandatory data, in the order specified below. Each data element is defined as either fixed or variable length. Where fields are variable in length, the minimum field length and the maximum field length (min...max) are shown below. All optional fields, including blank ones, shall be separated by the data element separator character ("$^{G}_{S}$") (see Annex A). Trailing data element separators shall be suppressed so that repeated $^{G}_{S}$ characters do not occupy the end of the format envelope.

It is possible that data that has been identified as optional data is not needed in all applications. The optional data fields and associated lengths are shown below.

Carrier assigned shipper ID (pick-up location)	(an 01...10)
Julian day of pickup	(n 03)
Shipment ID number	(an 01 ... 30)
n/x (container n of x total containers)	(n 01...04 / n 01...04)
Weight ("LB" or "KG") (decimal is a character if used)	(r 01...08, a02)

Cross match (value is Y or N)	(a 01)
Ship to street address	(an 01...35)
Ship to city	(an 01...35)
Ship to state/province	(an 02)
Ship to name	(an 01...35)

NOTE The weight qualifier is appended directly to the value without an intervening space and is in uppercase letters. An example of this format would be if shipment weight is 117,6 kg, this data stream would appear as 117.6 KG. For historic reasons, the encoded decimal mark is the character with hexadecimal value 2E as defined in ISO/IEC 646 as shown in Annex A.

5.4.3.3 Format "01" version "96"

5.4.3.3.1 Mandatory data

This data is required within version "96" of the "01" format. The following data elements shall be ordered as listed below, immediately following the format header. Each data element is defined as either fixed or variable length. Where fields are variable in length, the minimum field length and the maximum field length (min...max) are shown below. All fields are separated by the data element separator character ("$^{G}_{S}$") (see Annex A) defined in the format header.

Ship to postal code	(an 03...11)
Ship to country code (ISO 3166-1)	(n 03)
Class of service (assigned by carrier)	(an 01...03)
Tracking number (controlled by carrier)	(an 01...20)
Origin carrier SCAC	(an 02...04)

(SCAC of the carrier intended to transport the package)

The recommended class of service is 3 digits of numeric data.

5.4.3.3.2 Optional data

There are nine optional data elements. Optional data elements, if used, shall immediately follow mandatory data, in the order specified below. Each data element is defined as either fixed or variable length. Where fields are variable in length, the minimum field length and the maximum field length (min...max) are shown below. All optional fields, including blank ones, shall be separated by the data element separator character ("$^{G}_{S}$") (see Annex A). Trailing data element separators shall be suppressed so that repeated $^{G}_{S}$ characters do not occupy the end of the format envelope.

It is possible that data that has been identified as optional data is not needed in all applications. The optional data fields and associated lengths are shown below.

Carrier assigned shipper ID (pick-up location)	(an 01...10)
Julian day of pickup	(n 03)
Shipment ID number	(an 01 ... 30)
n/x (container n of x total containers)	(n 01...04 / n 01...04)
Weight (lb) (decimal is a character if used)	(r 01...10)

Cross match (value is **Y** or **N**)	(a 01)
Ship to street address	(an 01...35)
Ship to city	(an 01...35)
Ship to state/province	(an 02)

5.4.4 Format "02" — Complete EDI message / transaction

This format is used to encode an entire EDI transaction / message with the intent of passing it directly to an EDI translator. The format shall be either ASC X12, UN/EDIFACT or CII-standard. Enveloping structures as defined by the applicable standard shall be included, for example:

— ISA, GS, ST, SE, GE and IEA segments (for ASC X12);

— UNA, UNB, UNH, UNT and UNZ segments (for UN/EDIFACT); or

— message-group-header, message and message-group-trailer record (for CII standard).

The message trailer character "$^{E}o_{T}$" and the format trailer character "$^{R}_{S}$" shall not be used with format "02".

There shall be no more than one "02" format in a message envelope. Format "02" shall not be combined with any other format within a message envelope.

5.4.5 Format "03" — Structured data using ASC X12 segments

This format is used to represent data, such as ship to and ship from, etc., structured according to ASC X12 rules. This format allows the encodation of data represented by either individual ASC X12 segments without enveloping, i.e. ISA/IEA, GS/GE and ST/SE, or a single ASC X12 transaction set with enveloping, i.e. ST/SE. This data is not intended to be passed directly to an EDI translator.

For format "03," the version of ASC X12 format is contained in the format header. The character "$^{F}_{S}$" shall be used as the ASC X12 segment terminator. The character "$^{G}_{S}$" shall be used as the ASC X12 data element separator. The character "$^{U}_{S}$" shall be used as the ASC X12 sub-element separator (see Annex A).

EDI segments such as BIN that encode binary data shall not be used in format "03." Binary data should be encoded only in format "09" (see 5.3.2.12).

Format header "03" employs ANSI ASC X12 segments, used in North America. For international trade, format header "04" should be used. Format "03" is intended for use within North America only.

5.4.6 Format "04" — Structured data using UN/EDIFACT segments

This format is used to represent data, such as ship to and ship from, etc., structured according to UN/EDIFACT rules.

This format allows the encodation of data represented by either individual UN/EDIFACT segments without enveloping, i.e. UNB/UNA/UNZ and UNH/UNT, or a single UN/EDIFACT message with enveloping, i.e. UNH/UNT. This data is not intended to be passed directly to an EDI translator.

For format "04," the version of UN/EDIFACT format is contained in the format header. The character "$^{F}_{S}$" shall be used as the UN/EDIFACT segment terminator. The character "$^{G}_{S}$" shall be used as the UN/EDIFACT data element separator. The character "$^{U}_{S}$" shall be used as the UN/EDIFACT sub-element separator (see Annex A).

5.4.7 Format "05" — Data using GS1 application identifiers

Each data element in this format shall be preceded by the appropriate GS1 application identifier (AI) code, as specified by the GS1 General Specifications Standard, and followed by the data element separator character

"$^{G}_{S}$" unless the data element is the last field in the data format, i.e. the last format "05" data element is followed by the format trailer character "$^{R}_{S}$" (see Annex A).

5.4.8 Format "06" — Data using ASC MH 10 data identifiers

Each data element in this format shall be preceded by the appropriate ASC MH10 data identifier (DI) code, as specified by ANS MH10.8.2, and followed by the data element separator character "$^{G}_{S}$" unless the data element is the last field in the data format, i.e., the last format "06" data element is followed by the format trailer character "$^{R}_{S}$" (see Annex A).

5.4.9 Format "07" — Free form text format

This format permits free-form text information. There is no variable header data for this format. Complete sentences are followed by a period and, if the sentence is not the last sentence in a paragraph, two spaces. Two-line feeds are used between paragraphs. The format trailer character "$^{R}_{S}$" shall not be used within the free form text message.

5.4.10 Format "08" — Structured data using CII syntax rules

This format is structured data according to CII standards (defined by the Center for Informatization of Industry, Japan). Format "08" contains only one CII-message-record. Format-end and message-end in format "08" shall be indicated by the CII-message-trailer.

The message trailer character "$^{E}o_{T}$" and the format trailer character "$^{R}_{S}$" shall not be used with format "08".

Format "08" shall not be combined with any other format within a message envelope.

Format header "08" employs CII syntax rules, used in Japan. For international trade, format header "04" should be used.

NOTE Format "08" is intended for use within Japan only.

5.4.11 Format "09" — Binary data

This format is for binary data in any format. The length and format of the data shall be identified in the format header. Binary files shall be defined as to the type, compression technique and number of bytes used in the data stream.

Binary data strings, such as those that represent digital image data, may be included in messages exchanged by and agreed upon between trading partners. CAD/CAM drawings, picture files, various raster and vector graphic images, as well as 2D and 3D images are examples of the kinds of data that can be compressed and encoded for exchange. Typically, such binary data files are encoded and formatted according to an image file representation standard such as JPEG, TIFF, PCX, BMP, CSV, CGM, GIF and CCITT Group 4, that include header data followed by image data. The contents of the binary file data groupings, in order to be intelligible, need to be encapsulated within an identifying envelope that separates the binary image data from the other types of message information normally represented as characters.

By definition, binary data may include any eight-bit character, even those that have a special meaning as indicated elsewhere in this document. Care should be taken not to misinterpret binary values as characters having a special meaning as indicated elsewhere in this document.

The data element separator character "$^{G}_{S}$" shall be used in the header of format "09" to separate both data elements and to terminate the header because all fields in the header are variable length. Though the number of bytes is given in the header, the format trailer character "$^{R}_{S}$" shall follow the binary data to complete the format envelope.

5.4.12 Formats "10" to "11" — Reserved

These formats are reserved for future use.

5.4.13 Format "12" — Using text element identifiers

Each data element in this format shall be preceded by the appropriate text element identifier (TEI) as specified in the Air Transport Association (ATA) Common Support Data Dictionary (CSDD) and followed by the data element separator character "$^{G}_{S}$", unless the data element is the last field in the data format, i.e. the last format "12" data element is followed by the format trailer character "$^{R}_{S}$" (see Annex A). Format "12" should be used with agreement between trading partners.

5.4.14 Format "13" — Blocked

This format is blocked for use to avoid conflict with ISO/IEC 15961-2 format 13.

5.4.15 Format "14" — Data using JSON syntax

Data in this format shall be structured following the JSON standard defined in ISO/IEC 21778.

The requirement to use Unicode characters[8] within JSON applies to the set of characters which can be encoded and not on how to encode them. ADC media will have their own method(s) of encoding data which should be used to ensure the message can be properly decoded.

NOTE JSON backslash notation is available to encode data.

5.4.16 Format "15" — ISO/IEC 20248 verifiable data construct

This format shall contain a single element, an ISO/IEC 20248 raw envelope as encoded binary data.

5.4.17 Formats "16" to "99" — Reserved

These formats are reserved for future use.

Annex A
(normative)

Subset of ISO/IEC 646 (table of hexadecimal and decimal values)

HEX	DEC	ISO/IEC 646	HEX	DEC	ISO/IEC 646	HEX	DEC	ISO/IEC 646
00	00	NUL	30	48	0	60	96	'
01	01	SOH	31	49	1	61	97	a
02	02	STX	32	50	2	62	98	b
03	03	ETX	33	51	3	63	99	c
04	04	EOT	34	52	4	64	100	d
05	05	ENQ	35	53	5	65	101	e
06	06	ACK	36	54	6	66	102	f
07	07	BEL	37	55	7	67	103	g
08	08	BS	38	56	8	68	104	h
09	09	HT	39	57	9	69	105	i
0A	10	LF	3A	58	:	6A	106	j
0B	11	VT	3B	59	;	6B	107	k
0C	12	FF	3C	60	<	6C	108	l
0D	13	CR	3D	61	=	6D	109	m
0E	14	SO	3E	62	>	6E	110	n
0F	15	SI	3F	63	?	6F	111	o
10	16	DLE	40	64	@	70	112	p
11	17	DC1	41	65	A	71	113	q
12	18	DC2	42	66	B	72	114	r
13	19	DC3	43	67	C	73	115	s
14	20	DC4	44	68	D	74	116	t
15	21	NAK	45	69	E	75	117	u
16	22	SYN	46	70	F	76	118	v
17	23	ETB	47	71	G	77	119	w
18	24	CAN	48	72	H	78	120	x
19	25	EM	49	73	I	79	121	y
1A	26	SUB	4A	74	J	7A	122	z
1B	27	ESC	4B	75	K	7B	123	{
1C	28	FS	4C	76	L	7C	124	|
1D	29	GS	4D	77	M	7D	125	}
1E	30	RS	4E	78	N	7E	126	~
1F	31	US	4F	79	O	7F	127	DEL
20	32	SP	50	80	P			
21	33	!	51	81	Q			
22	34	"	52	82	R			
23	35	#	53	83	S			
24	36	$	54	84	T			
25	37	%	55	85	U			

HEX	DEC	ISO/IEC 646	HEX	DEC	ISO/IEC 646	HEX	DEC	ISO/IEC 646
26	38	&	56	86	V			
27	39	'	57	87	W			
28	40	(	58	88	X			
29	41	)	59	89	Y			
2A	42	*	5A	90	Z			
2B	43	+	5B	91	[			
2C	44	,	5C	92	\			
2D	45	-	5D	93	]			
2E	46	.	5E	94	^			
2F	47	/	5F	95	_			

Annex B
(informative)

Examples of ADC media encoded with ISO/IEC 15434 syntax

B.1 General

This annex provides examples of ADC media encoded with ISO/IEC 15434 syntax. All of the examples are in the form of machine readable symbologies even though ISO/IEC 15434 syntax is suitable for other forms of ADC media, such as radio frequency identification (RFID) tags, magnetic stripe digital cards and contact memory buttons. A variety of symbologies have been chosen arbitrarily to represent examples of the available formats. The examples for formats "08", "09" and "15" use a representation of the encoded binary data as a pair of hexadecimal characters preceded by a zero and lowercase x. For example, a record separator character is shown as a human readable representation $^{R}_{S}$, as described in Clause 4. This same character can be equivalently represented by its hexadecimal value as 0x1E. When used, a single space separates the 0x-hexadecimal representation from other data for readability. These spaces are not encoded into the ADC media.

B.2 Format "01", transportation, encoded ADC media example

The following example encodes ISO/IEC 15434 syntax using format "01" into ADC media.

Encoded message:

[)>$^{R}_{S}$**01**$^{G}_{S}$**0291521**$^{G}_{S}$**840**$^{G}_{S}$**021**$^{G}_{S}$**394594459756**$^{G}_{S}$**FDEG**$^{G}_{S}$**9779976**$^{G}_{S}$**189**$^{G}_{S}{}^{G}_{S}$**1/1**$^{G}_{S}$**0.06LB**$^{G}_{S}$**N**$^{G}_{S}$**500 South Buena Vista Street**$^{G}_{S}$**Burbank**$^{G}_{S}$**CA**$^{G}_{S}$**Jennifer Stewart**$^{R}_{S}{}^{E}_{O_T}$

where

"**[)>**$^{R}_{S}$" is the complete message header

"**01**" is the format indicator

"$^{G}_{S}$" is the data element separator (for every instance in the encoded message)

"**02**" is the two-digit version

"**91521**" is the ship to postal code

"**840**" is the ISO 3166-1 ship to country code

"**021**" is the class of service

"**394594459756**" is the tracking number

"**FDEG**" is the origin carrier SCAC

"**9779976**" is the carrier assigned shipper ID

"**189**" is the Julian day of pickup

"**1/1**" is the number of the container of the total number of containers

"**0.06LB**" is the weight

"**N**" is the cross match value

"**500 South Buena Vista Street**" is the ship to street address

"**Burbank**" is the ship to city

"**CA**" is the ship to state

"**Jennifer Stewart**" is the ship to name

"$^{R}_{S}$" is the format trailer character

"$^{E}o_{T}$" is the message trailer

NOTE "$^{G}_{S}{}^{G}_{S}$" is present when an optional data element has been omitted.

Encoded ADC media:

B.3 Format "02", complete EDI message, encoded ADC media example

The following example encodes ISO/IEC 15434 syntax using format "02" into ADC media.

Encoded message:

[)>$^{R}_{S}$02ISA$^{G}_{S}$05$^{G}_{S}$ $^{G}_{S}$00$^{G}_{S}$ $^{G}_{S}$10$^{G}_{S}$M99999 $^{G}_{S}$10$^{G}_{S}$N99998 $^{G}_{S}$221213$^{G}_{S}$1719$^{G}_{S}$U$^{G}_{S}$04010$^{G}_{S}$314159265$^{G}_{S}$0$^{G}_{S}$T$^{G}_{S}$U$^{F}_{S}$GS$^{G}_{S}$SH$^{G}_{S}$S36121$^{G}_{S}$N99998$^{G}_{S}$20221213$^{G}_{S}$17 19$^{G}_{S}$2 7182818$^{G}_{S}$X$^{G}_{S}$004010$^{F}_{S}$ST$^{G}_{S}$856$^{G}_{S}$0017$^{F}_{S}$BSN$^{G}_{S}$00$^{G}_{S}$JU734XG2$^{G}_{S}$20221213$^{G}_{S}$171933$^{G}_{S}$0001$^{F}_{S}$HL$^{G}_{S}$ 1$^{G}_{S}{}^{G}_{S}$ S$^{F}_{S}$TD1$^{G}_{S}$PKG$^{G}_{S}$5$^{G}_{S}{}^{G}_{S}{}^{G}_{S}{}^{G}_{S}G^{G}_{S}610^{G}_{S}LB^{F}_{S}$TD5$^{G}_{S}{}^{G}_{S}2^{G}_{S}$FXPG$^{G}_{S}L^{G}_{S}$FedEx$^{F}_{S}REF^{G}_{S}PK^{G}_{S}794809362246^{F}_{S}$DTM $^{G}_{S}$011$^{G}_{S}$20221213$^{F}_{S}$DTM$^{G}_{S}$067$^{G}_{S}$20230110$^{F}_{S}$N1$^{G}_{S}$ST$^{G}_{S}$ANY BASE USA$^{G}_{S}$92$^{G}_{S}$N99998$^{F}_{S}$HL$^{G}_{S}$1$^{G}_{S}{}^{G}_{S}$I$^{F}_{S}$LIN$^{G}_{S}{}^{G}_{S}$FS$^{G}_{S}$3611016767952$^{F}_{S}$SE$^{G}_{S}$12$^{G}_{S}$0017$^{F}_{S}$GE$^{G}_{S}$1$^{G}_{S}$27182818$^{F}_{S}$I EA$^{G}_{S}$1$^{G}_{S}$314159265

where

"**[)>$^{R}_{S}$**" is the complete message header

"**02**" is the format indicator

"**ISA**" is the interchange control header

"$^{G}_{S}$" is the data element separator (for every instance in the encoded message)

"**05**" is the authorization information qualifier

" " (ten spaces) is the authorization information

"**00**" is the security information qualifier

" " (ten spaces) is the security information

"**10**" is the interchange identification qualifier

"**M99999** " is the interchange sender identification

"**10**" is the interchange identifier qualifier

"**N99998** " is the interchange receiver identification

"**221213**" is the interchange date (UTC), format: YYMMDD

"**1719**" is the interchange time (UTC), format: HHMM

“**U**” is the interchange control identification

“**04010**” is the interchange control version number

“**314159265**” is the interchange control number

“**0**” is the acknowledgement requested

“**T**” is the usage indicator

“$^{U}_{S}$” is the component element separator (for every instance in the encoded message)

“$^{F}_{S}$” is the new line character (for every instance in the encoded message)

“**GS**” is the functional group header

“**SH**” is the functional identification code

“**S36121**” is the application sender's code

“**N99998**” is the application receiver's code

“**20221213**” is the date (UTC), format: CCYYMMDD

“**1719**” is the time (UTC), format: HHMM

“**27182818**” is the group control number

“**X**” is the responsible agent code

“**004010**” is the version release

“**ST**” is the transaction set header

“**856**” is the transaction set identifier code

“**0017**” is the transaction set control number

“**BSN**” is the beginning segment for ship notice indicator

“**00**” is the transaction set purpose code

“**JU734XG2**” is the shipment identification

“**20221213**” is the date, format: CCYYMMDD

“**171933**” is the time, format: HHMMSS

“**0001**” is the hierarchical structure code

“**HL**” is the hierarchical level segment indicator

“**1**” is the hierarchical identification number

“**S**” is the hierarchical level code

“**TD1**” is the carrier details (weight and quantity) segment indicator

“**PKG**” is the packaging code

“**5**” is the lading quantity

“**G**” is the weight qualifier

“**610**” is the weight

"**LB**" is the unit of measurement code

"**TD5**" is the carrier details (routing sequence/transit time) segment indicator

"**2**" is the identification code qualifier

"**FXPG**" is the identification code

"**L**" is the transportation method/type code

"**FedEx**" is the routing

"**REF**" is the reference identification segment indicator

"**PK**" is the reference identification qualifier

"**794809362246**" is the reference identification

"**DTM**" is for the date/time reference segment indicator

"**011**" is the date/time qualifier

"**20221213**" is the date, format: CCYYMMDD

"**DTM**" is for the date/time reference segment indicator

"**067**" is the date/time qualifier

"**20230110**" is the date, format: CCYYMMDD

"**N1**" is the name segment indicator

"**ST**" is the entity identifier code

"**ANY BASE USA**" is the name

"**92**" is the identification code qualifier

"**N99998**" is the identification code

"**HL**" is the hierarchical level segment indicator

"**1**" is the hierarchical identification number

"**I**" is a hierarchical level code

"**LIN**" is the item identification segment indicator

"**FS**" is the product/service identification qualifier

"**3611016767952**" is the product/service identifier

"**SE**" is the transaction set trailer

"**12**" is the number of included segments

"**0017**" is the transaction set control number

"**GE**" is the functional group trailer

"**1**" is the number of transaction sets included

"**27182818**" is the group control number

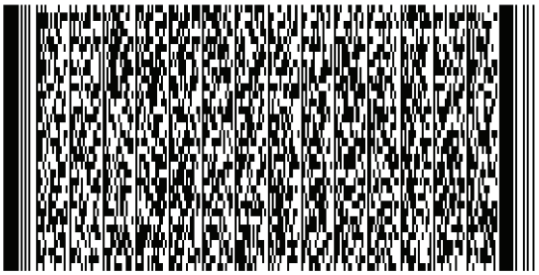
"**IEA**" is the interchange control trailer

"**1**" is the number of functional groups in the interchange

"**314159265**" is the interchange control number

NOTE "$^{G}_{S}{}^{G}_{S}$" is present when an optional data element has been omitted.

Encoded ADC media:



B.4 Format "03", structured data using ANSI ASC X12 segments, encoded ADC media example

The following example encodes ISO/IEC 15434 syntax using format "03" into ADC media.

Encoded message:

[)>$^{R}_{S}$03004010$^{F}_{S}{}^{G}_{S}{}^{U}_{S}ST^{G}_{S}856^{G}_{S}0017^{F}_{S}BSN^{G}_{S}00^{G}_{S}$JU734XG2$^{G}_{S}20221213^{G}_{S}171933^{G}_{S}0001^{F}_{S}HL^{G}_{S}1^{G}_{S}{}^{G}_{S}S^{F}_{S}$ TD1$^{G}_{S}$PKG$^{G}_{S}$5$^{G}_{S}{}^{G}_{S}{}^{G}_{S}{}^{G}_{S}G^{G}_{S}610^{G}_{S}LB^{F}_{S}$TD5$^{G}_{S}{}^{G}_{S}2^{G}_{S}$FXPG$^{G}_{S}L^{G}_{S}$FedEx$^{F}_{S}REF^{G}_{S}PK^{G}_{S}794809362246^{F}_{S}DTM^{G}_{S}$ 011$^{G}_{S}$20221213$^{F}_{S}$DTM$^{G}_{S}$067$^{G}_{S}$20230110$^{F}_{S}$N1$^{G}_{S}$ST$^{G}_{S}$ANY BASE USA$^{G}_{S}$92$^{G}_{S}$N99998$^{F}_{S}$HL$^{G}_{S}$1$^{G}_{S}{}^{G}_{S}$I$^{F}_{S}$LIN$^{G}_{S}{}^{G}_{S}$FS$^{G}_{S}$3611016767952$^{F}_{S}$SE$^{G}_{S}$12$^{G}_{S}$0017$^{F}_{S}{}^{R}_{S}{}^{E}$o$_{T}$

where

"**[)>**$^{R}_{S}$" is the complete message header

"**03**" is the format indicator

"**004**" is the three-digit version

"**010**" is the three-digit release

"$^{F}_{S}$" is the segment terminator (for every instance in the encoded message)

"$^{G}_{S}$" is the segment separator (for every instance in the encoded message)

"$^{U}_{S}$" is the sub-element separator (for every instance in the encoded message)

"**ST**" is the transaction set header

"**856**" is the transaction set code

"**0017**" is the transaction set control number

"**BSN**" is the beginning segment for ship notice indicator

"**00**" is the transaction set purpose code

"**JU734XG2**" is the shipment identification

"**20221213**" is the date, format: CCYYMMDD

"**171933**" is the time, format: HHMMSS

"**0001**" is the hierarchical structure code

"**HL**" is the hierarchical level segment indicator

"**1**" is the hierarchical identification number

"**S**" is the hierarchical level code

"**TD1**" is the carrier details segment (weight and quantity) segment indicator

"**PKG**" is the packaging code

"**5**" is the lading quantity

"**G**" is the weight qualifier

"**610**" is the weight

"**LB**" is the unit of measurement code

"**TD5**" is the carrier details (routing sequence/transit time) segment indicator

"**2**" is the identification code qualifier

"**FXPG**" is the identification code

"**L**" is the transportation method/type code

"**FedEx**" is the routing

"**REF**" is the reference identification segment indicator

"**PK**" is the reference identification code

"**794809362246**" is the reference identification

"**DTM**" is for the date/time reference segment indicator

"**011**" is the date/time qualifier

"**20221213**" is the date, format: CCYYMMDD

"**DTM**" is for the date/time reference segment indicator

"**067**" is the date/time qualifier

"**20230110**" is the date, format: CCYYMMDD

"**N1**" is the name segment indicator

"**ST**" is the entity identifier code

"**ANY BASE USA**" is the name

"**92**" is the identification code qualifier

"**N99998**" is the identification code

"**HL**" is the hierarchical level segment indicator

"**1**" is the hierarchical identification number

"**I**" is a hierarchical level code

"**LIN**" is the item identification segment indicator

"**FS**" is the product/service identification qualifier

"**3611016767952**" is the product/service identifier

"**SE**" is the transaction set trailer

"**12**" is the number of included segments

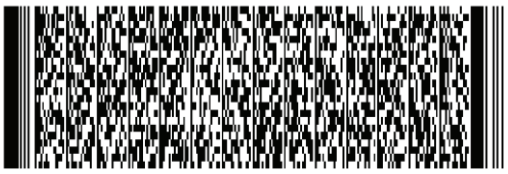
"**0017**" is the transaction set control number

"$^{R}_{S}$" is the format trailer character

"$^{E}_{T}$" is the message trailer

NOTE "$^{G}_{S}{}^{G}_{S}$" is present when an optional data element has been omitted.

Encoded ADC media:



B.5 Format "04", structured data using UN/EDIFACT segments, encoded ADC media example

The following example encodes ISO/IEC 15434 syntax using format "04" into ADC media.

Encoded message:

[ ) > $^{R}_{S}$ 0 4 0 0 1 0 0 1 $^{F}_{S}$ $^{G}_{S}$ $^{U}_{S}$ U N B $^{G}_{S}$ U N O A $^{U}_{S}$ 1 $^{G}_{S}$ 0 1 0 1 0 0 0 0 2 5 3 0 0 1 $^{G}_{S}$ O 0 0 1 3 0 0 0 0 9 3 S C H A - Z 5 9 $^{G}_{S}$ 9 9 1 0 0 6 $^{U}_{S}$ 1 9 0 2 $^{G}_{S}$ P A Y O 1 2 1 0 1 2 2 1 $^{F}_{S}$ U N H $^{G}_{S}$ 1 $^{G}_{S}$ I N V O I C $^{U}_{S}$ D $^{U}_{S}$ 9 7 A $^{U}_{S}$ U N $^{F}_{S}$ B G M $^{G}_{S}$ 3 8 1 $^{G}_{S}$ 1 0 6 0 1 1 3 8 0 0 0 2 6 $^{G}_{S}$ 9 $^{F}_{S}$ D T M $^{G}_{S}$ 1 3 7 $^{U}_{S}$ 1 9 9 9 1 0 0 6 0 0 0 0 $^{U}_{S}$ 1 0 2 $^{F}_{S}$ N A D $^{G}_{S}$ B T $^{G}_{S}$ V A U X H A L L M O T O R S L T D $^{U}_{S}$ $^{U}_{S}$ 9 1 $^{F}_{S}$ R F F $^{G}_{S}$ V A $^{U}_{S}$ 3 8 2 3 2 4 0 6 7 $^{F}_{S}$ U N S $^{G}_{S}$ S $^{F}_{S}$ M O A $^{G}_{S}$ 7 7 $^{U}_{S}$ 1 9 6 0 . 2 9 $^{F}_{S}$ T A X $^{G}_{S}$ 7 $^{G}_{S}$ V A T $^{F}_{S}$ U N T $^{G}_{S}$ 2 4 $^{G}_{S}$ 1 $^{F}_{S}$ U N Z $^{G}_{S}$ 1 $^{G}_{S}$ P A Y O 0 0 1 2 1 0 1 2 2 1 $^{F}_{S}$ $^{R}_{S}$ $^{E}_{T}$

where

"**[ ) >** $^{R}_{S}$" is the complete message header

"**04**" is the format indicator

"**001001**" is the version and release indicator

"$^{F}_{S}$" is the segment terminator (for every instance in the encoded message)

"$^{G}_{S}$" is the data element separator (for every instance in the encoded message)

"$^{U}_{S}$" is the sub-element separator (for every instance in the encoded message)

"**UNB**" is the file header

"**UNOA**" is the syntax identifier

"**1**" is the syntax version number

"**01010000253001**" is the interchange sender identifier

"**O0013000093SCHA-Z59**" is the interchange receiver identifier

"**991006**" is the date of preparation

"**1902**" is the time of preparation

"**PAYO12101221**" is the recipient reference number

“**UNH**” is the message header segment indicator

“**1**” is the message identifier

“**INVOIC**” is the message type

“**D**” is the message version number

“**97A**” is the message release number

“**UN**” is the controlling agency, coded

“**BGM**” is the beginning of message segment indicator

“**381**” is the document/message name, coded

“**1060113800026**” is the document/message identification

“**9**” is the message function, coded

“**DTM**” is the date/time/period segment indicator

“**137**” is the date/time/period qualifier

“**199910060000**” is the date/time/period

“**102**” is the date/time/period format qualifier

“**NAD**” is the name and address segment indicator

“**BT**” is the party qualifier

“**VAUXHALL MOTORS LTD**” is the party identification

“**91**” is the code list responsible agency, coded

“**RFF**” is the reference segment indicator

“**VA**” is the reference qualifier

“**382324067**” is the reference number

“**UNS**” is the section control segment indicator

“**S**” is the section identification

“**MOA**” is the monetary amount segment indicator

“**77**” is the monetary amount type qualifier

“**1960.29**” is the monetary amount

“**TAX**” is the duty/tax/fee details segment indicator

“**7**” is the duty/tax/fee function qualifier

“**VAT**” is the duty/tax/fee type, coded

“**UNT**” is the message trailer segment indicator

“**24**” is the number of segments in message

“**1**” is the message reference number

“**UNZ**” is the interchange trailer