



jPOS Common Message Format

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1.0.10

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# About this document

This is an internal document used as our development road map and master workbook.

It defines the jPOS Common Message Format based on the ISO-8583 v2003 standard.

A copy of the standard can be purchased at the ISO Store [<http://iso.org>]

Please check our Appendix G, *License terms*.

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# Chapter 1. Message Structure

## Field Representation

The message format used by jPOS Common Message Format uses data elements whose permissible contents are indicated via abbreviations described in the following table:

**Table 1.1. Representation abbreviations**

Abbreviation	Definition
<b>n</b>	Fixed length field.
<b>..nn[n[n]]</b>	Variable length of up to maximum 'nn' characters or digits. All variable length fields shall in addition contain two (abbreviated as LLVAR), three positions (abbreviated as LLLVAR) or four positions (abbreviated as LLLLVAR) at the beginning of the data element representing the length of the field itself.
<b>Nn</b>	Fixed length numeric field represented in BCD format. n indicates the number of BCD digits. If the number of BCD digits is odd, a final 'F' is added to the right.
<b>N..nn</b>	Variable length numeric field represented in BCD format. nn indicates the maximum number of BCD digits allowed. If the number of BCD digits is odd, a final 'F' is added to the right.
<b>ANn</b>	Fixed length alphanumeric field (ASCII format). n indicates the field length.
<b>AN..nn</b>	Variable length alphanumeric field (ASCII format). nn indicates the maximum field length.
<b>bn</b>	Fixed length binary field. n indicates the field length in bits.
<b>Bn</b>	Fixed length binary field. n indicates the field length in bytes.
<b>B..nn</b>	Variable length binary field nn indicates the maximum field length in bytes.
<b>z..nn</b>	Track 2 and 3 code set as specified in ISO-4909, ISO-7811-2 and ISO-7813. nn indicates the maximum field length in nibbles.
<b>Z..nn</b>	Track 2 and 3 code set as specified in ISO-4909, ISO-7811-2 and ISO-7813. nn indicates the maximum field length in bytes.
<b>LLVAR</b>	Variable length is expressed in two BCD digits (0 to 99)
<b>LLLVAR</b>	Variable length is expressed in three BCD digits (0 to 999)
<b>LLLLVAR</b>	Variable length is expressed in four BCD digits (0 to 9999)

## Message Components

The ISO-8583 messages transmitted and received by jPOS Common Message Format use the following over-the-wire representation:

**Table 1.2. Wire Protocol**

Component	Format	Mandatory	Description
Message Length	2 bytes (nbo)	Yes	Message length represented as two bytes in network byte order (BIG ENDIAN) used to determine message boundaries in the TCP/IP stream.
ISO-8583 Version	N1	Yes	ISO-8583 version. jPOS Common Message Format uses version 2003 represented by the constant value 2.
MTI	N3	Y	ISO-8583 Message Type Indicator.

Component	Format	Mandatory	Description
Primary Bitmap	64 bits	Yes	64 bits indicating the list of ISO-8583 data elements present in the message (data elements 2 to 64). The first bit indicates the presence of a secondary bitmap.
Secondary Bitmap	64 bits	Optional	64 bits indicating the list of ISO-8583 data elements present in the message (65 to 128).
Data Elements	byte stream	Yes	Variable length binary representation of the data elements present in the message.

## Message Type Identifiers

jPOS Common Message Format implements the following message classes:

**Table 1.3. Message Type Identifiers**

Request	Response	Description
<b>100</b>	<b>110</b>	Authorization, Balance Inquiry, Mini statements
<b>200</b>	<b>210</b>	Financial presentment, Purchase, Void, Refund / Return, Refresh, Transfer
<b>300</b>	<b>310</b>	Card Activation/De-Activation
<b>304</b>	<b>314</b>	File Update
<b>420</b>	<b>430</b>	Reversals of Authorization and Financial messages
<b>804</b>	<b>814</b>	Network Management



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# Chapter 2. Data Elements

## MTI - Message Type Identifier

**Data Element: MTI**

**Format: N4, NUM**

### Description

Message type identifier composed of:

- One digit version number
- Three digit message identifier

## DE-002 Primary Account Number (PAN)

**Data Element: 2**

**Format: N..19, LLVAR**

### Description

The Primary Account Number (PAN) contains the account number used to identify a customer account or relationship and remains unchanged for the life of a transaction.

If this field is not present and the message contains data element 35, the system will obtain the primary account by parsing the track-two data contained there.

## DE-003 Processing Code

**Data Element: 3**

**Format: AN6**

### Description

The processing code (also called `pcode` in this documentation) is a constructed data element composed of three subfields:

- Transaction Type Code, AN2
- Account Type Code 1, AN2

- Account Type Code 2, AN2

The Transaction Type Code (TTC) is used along with the Message Type Indicator (MTI) as a key to uniquely identify the type of transaction being processed.

**Table 2.1. Positions 1 & 2 (Transaction Type Code)**

MTI	TTC	Description
100	00	Authorization (Goods and Services) ( <i>See the section called "Authorization / Balance Inquiry"</i> )
100	02	Authorization Void (Goods and Services) ( <i>See the section called "Authorization / Balance Inquiry"</i> )
100	20	Refund/Return ( <i>See the section called "Authorization / Balance Inquiry"</i> )
100	22	Refund/Return Void ( <i>See the section called "Authorization / Balance Inquiry"</i> )
100	30	Balance Inquiry ( <i>See the section called "Authorization / Balance Inquiry"</i> )
200	00	POS Purchase
200	01	Cash Withdrawal ( <i>See the section called "Authorization / Balance Inquiry"</i> )
200	02	Void
200	20	Refund / Return
200	21	Payment / Deposit / Refresh
200	40	Account Transfer
220	00	Purchase Advice
220	20	Refund / Return Advice
304	72	Card Activation
304	7S	Card De-Activation
420	XX	Reversal - use same code as original ( <i>See the section called "Reversals"</i> )

The Transaction type code describes the specific transaction type. The Account type Code 1 describes the account type affected for debits and inquiries and the "from" account for transfers. The Account type Code 2 describes the account type affected for credits and the "to" account for transfers.

**Table 2.2. Account Types**

Type	Description
00	Default - unspecified
10	Savings account
20	Cheque account
30	Credit facility
31	jCard Refunds/Returns account
40	Universal account
50	Investment account
60	Electronic purse card account

## DE-004 Amount transaction

## **Data Element: 4**

### **Format: N16**

### **Description**

Transaction amount is a constructed data element of three parts totalling 16 positions:

- ISO-4217 Currency code, N3
- Currency minor unit, N1
- Amount Transaction, N12

## **DE-005 Amount reconciliation**

### **Data Element: 5**

### **Format: N16**

### **Description**

Transaction amount is a constructed data element of three parts totalling 16 positions:

- ISO-4217 Currency code, N3
- Currency minor unit, N1
- Amount Transaction, N12

## **DE-006 Amount cardholder billing**

### **Data Element: 6**

### **Format: N16**

### **Description**

If transaction fee(s) and/or currency conversion is involved in the transaction, jPOS Common Message Format uses this data element to represent the actual amount billed to the cardholder.

- ISO-4217 Currency code, N3
- Currency minor unit, N1
- Amount Transaction, N12

## **DE-007 Date and time transmission**

## **Data Element: 7**

**Format: N10**

### **Description**

Date and time the message initiator sends this message expressed in UTC (MMDDhhmmss).

## **DE-008 Amount cardholder billing fee**

**Data Element: 8**

**Format: N12**

### **Description**

If a transaction fee is involved, jPOS Common Message Format uses this data element to represent the actual fee amount.

#### **Note**

DE 006 (DE-006 Amount cardholder billing) contains the total amount including this fee.

- ISO-4217 Currency code, N3
- Currency minor unit, N1
- Amount Transaction, N8

## **DE-011 System Trace Audit Number (STAN)**

**Data Element: 11**

**Format: N12**

### **Description**

Unique sequence number used to match a request/response pair.

## **DE-012 Date and time local transaction**

**Data Element: 12**

**Format: N14**

## Description

Date and time local transaction in CCYYMMDDhhmmss format providing the local year, month, day and time in which the transaction takes place at the card acceptor location.

This field remains unchanged throughout the lifetime of the transaction.

## DE-013 Date effective

**Data Element: 13**

**Format: N6**

## Description

Effective card date in CCYYMM format.

## DE-014 Expiration date

**Data Element: 14**

**Format: N4 (YYMM)**

## Description

Expiration date of the card. It must be present whenever the acceptor does not automatically capture either the track2 or track1. The expiration date should represent the date after which the card has to be flagged as expired and the transaction declined.

## DE-015 Settlement date

**Data Element: 15**

**Format: N8 (CCYYMMDD)**

## Description

Settlement date in CCYYMMDD format.

## DE-017 Capture date

**Data Element: 17**

## Format: N4

### Description

jPOS Common Message Format capture date in MMDD format.

## DE-018 Message Error Indicator

### Data Element: 18

### Format: AN..140, LLLVAR

### Description

The message error indicator is a constructed data element of up to ten sets of values. Each set of values defines a single error condition and consists of six parts totalling 14 positions:

- Error severity code, N2
- Message error code, N4
- Data Element in error, N3
- Data sub-element in error (in constructed data element), N2
- Dataset identifier in error (in composite data element), B1
- Data bit or tag in error (in composite data element), B2

The error severity code contains a value of 00 (zero zero) to denote a rejected message or 01 to denote a message that was accepted and processed but contained invalid data in non-critical elements (00=error, 01=warning).

The message error code contains a code identifying the error condition as described in the following table:

The data element in error contains the data element number (001-128) and same goes for data sub-element, data set, bit or tag.

## DE-021 Transaction life cycle identification data

### Data Element: 21

### Format: AN22

### Description

The *Transaction life cycle identification data* is a constructed data element of four parts totalling 22 positions:

- Life cycle support indicator, AN 1
- Life cycle trace identifier, AN 15
- Life cycle transaction sequence number, N2
- Life cycle authentication token, N4

## DE-022 Point-of-Service data code

### Data Element: 22

### Format: B16

### Description

Indicates the method used to capture the PAN as well as the terminal's capabilities.

This is a constructed data element composed of four 32-bit (four bytes) indicating:

- Card reading method used at POS
- Cardholder verification method used at POS
- POS environment
- Security characteristics

**Table 2.3. Card reading method used at POS**

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Unknown	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Information not taken from card (e.g. RFID)	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Physical (key entry or OCR reading of embossing or printed data either at time of transaction or after the event)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Bar Code	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Magnetic Stripe	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
ICC	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Account data on file	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Reserved	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
Reserved	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-
Reserved	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
ICC read attempted but failed	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Magnetic stripe read attempted but failed	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Fall back	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x

### Note

Bits 17 to 32 are reserved for ISO, National and Private use and not currently used by jPOS Common Message Format.

The following table lists the value attributed to each bit of the 32 bits (four bytes) which indicate the cardholder verification method actually used by the POS.

**Table 2.4. Cardholder verification method used at POS**

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Unknown	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
None	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manual signature verification	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Online PIN	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Offline PIN in clear	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Offline PIN encrypted	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Offline digitized signature analysis	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Offline biometrics	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
Offline manual verification, e.g. passport or driver's license	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-
Offline biographics	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
Account based digital signature	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
Public key based digital signature	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x

### Note

Bits 17 to 32 are reserved for ISO, National and Private use and not currently used by jPOS Common Message Format.

The following table lists the value attributed to each bit of the 32 bits (four bytes) which indicate the POS environment.

**Table 2.5. POS environment**

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Unknown	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Attended POS	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-



	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Unattended, details unknown	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Mail order / telephone order	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Electronic commerce	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Mobile commerce	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
Recurring transaction	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Stored details	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
Cardholder Activated Terminal (CAT)	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-
ATM on bank premises	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
ATM off bank premises	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
Deferred transaction	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Installment transaction	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-
Reserved	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x

## Note

Bits 17 to 32 are reserved for ISO, National and Private use and not currently used by jPOS Common Message Format.

The following table lists the value attributed to each bit of the 32 bits (four bytes) which indicate the security characteristics.

**Table 2.6. Security characteristics (Bits 1 to 16)**

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Unknown	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Private network	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Open network (Internet)	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Channel MACing	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-
Pass through MACing	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Channel encryption	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-
End-to-end encryption	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
Private algorithm encryption	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
PKI encryption	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-
Private algorithm MACing	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
Standard algorithm MACing	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
Cardholder managed end-to-end encryption	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
Cardholder managed point-to-point encryption	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
Merchant managed end-to-end encryption	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-
Merchant managed point-to-point encryption	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-

	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	B15	B16
Acquirer managed end-to-end encryption	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

**Table 2.7. Security characteristics (Bits 17 to 32)**

	B17	B18	B19	B20	B21	B22	B23	B24	B25	B26	B27	B28	B29	B30	B31	B32
Acquirer managed point-to-point encryption	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-	-
Reserved for ISO use	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-	-
Reserved for national use	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-	-
Reserved for national use	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-	-
Reserved for national use	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-	-
Reserved for national use	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-	-
Reserved for private use	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-	-
Reserved for private use	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-	-
Reserved for private use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	x	-
Reserved for private use	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1

**Note**

Bits 17 to 32 are reserved for ISO, National and Private use and not currently used by jPOS Common Message Format.

## DE-023 jCard Sequence Number

**Data Element: 23****Format: N3**

### Description

A number distinguishing between separate cards with the same primary account number.

## DE-024 Function Code

**Data Element: 24****Format: N3**

## Description

A code indicating the specific purpose of a message within its message class. Appendix C, *Function codes* provides a list of function codes values supported by jPOS Common Message Format

## DE-025 Reason Code

**Data Element: 25**

**Format: N4**

## Description

Provides the receiver of a request, advice or notification message with the reason, or purpose, of the message. Appendix D, *Reason codes* provides a list of possible reason code values supported by jPOS Common Message Format

## DE-026 Merchant Category Code

**Data Element: 26**

**Format: N4**

## Description

Code classifying the type of business being done by the card acceptor for this transaction

## DE-030 Amounts original

**Data Element: 30**

**Format: N32**

## Description

Amounts original is a constructed data element of two parts totalling 32 positions.

- Original amount transaction, N16
- Original amount reconciliation, N16

Each 16-positions part is in turn a constructed data element of three parts:

- ISO-4217 Currency code, N3
- Currency minor unit, N1

- Amount Value, N12

## DE-032 Acquiring institution identification code

**Data Element: 32**

**Format: N..11, LLVAR**

### Description

A code identifying the acquirer.

## DE-033 Forwarding institution identification code

**Data Element: 33**

**Format: N..11, LLVAR**

### Description

A code identifying the forwarding institution.

## DE-035 Track 2 data

**Data Element: 35**

**Format: z..37, LLVAR**

### Description

The information encoded on the Track 2 of the magnetic stripe <sup>1</sup> including field separators and excluding the start sentinel, end sentinel and longitudinal redundancy check (LRC) characters.

This is a compound field consisting of the following elements:

**Table 2.8. Track 2 subfields**

Name	Format
Primary Account Number	up to 19 digits

---

<sup>1</sup>See ISO-7813

Name	Format
Field Separator	can be either '=' or 'D'
Expiration Date	in YYMM format
Service Restriction Code	three digits
Discretionary data	balance of available digits

## DE-037 Retrieval Reference Number

**Data Element: 37**

**Format: AN12**

### Description

Alphanumeric code assigned by jPOS Common Message Format in order to uniquely identify a transaction. This code remains unchanged throughout the life of the transaction.

#### Tip

Although this field is called Retrieval Reference "Number", please note this is an alphanumeric field that may contain regular characters.

## DE-038 Approval Code

**Data Element: 38**

**Format: AN6**

### Description

Approval Code assigned by jPOS Common Message Format when the transaction is approved (see DE 039).

## DE-039 Result Code

**Data Element: 39**

**Format: AN4**

### Description

Result Code returned by jPOS Common Message Format to indicate whether the transaction is approved or declined.

## DE-041 Card Acceptor Terminal ID ('TID')

**Data Element: 41**

**Format: AN16**

### Description

A code used to uniquely identify the terminal originating a transaction; this code is also referred to as the Terminal Identifier or 'TID.'

## DE-042 Card Acceptor Identification Code ('MID')

**Data Element: 42**

**Format: AN..35, LLVAR**

### Description

A code used to uniquely identify the card acceptor originating a transaction; this code is also referred to as the Merchant Identifier or 'MID.'

## DE-043 Card acceptor name/location

**Data Element: 43**

**Format: B..9999**

### Description

The name and location of the card acceptor as known to the cardholder. This is a constructed data field containing:

**Table 2.9. DE 43 subfields**

Name	Format
Bitmap	64 bits indicating field presense.
Bit 2, Card acceptor Name	LLVAR ANS..50
Bit 3, Card acceptor street address	LLVAR ANS..99
Bit 4, Card acceptor city	LLVAR ANS..50
Bit 5, Card acceptor state, province or region code	ANS 3

Name	Format
Bit 6, Card acceptor postal code	ANS 10
Bit 7, Card acceptor country code	ANS 3
Bit 8, Card acceptor phone number	ANS 16
Bit 9, Card acceptor customer service phone number	ANS 16
Bit 10, Card acceptor additional contact information	LLVAR ANS..30
Bit 11, Card acceptor internet URL	LLVAR ANS..255
Bit 12, Card acceptor e-mail address	LLVAR ANS..99

## DE-045 Track 1 data

### Data Element: 45

**Format: AN..76, LLVAR**

### Description

The information encoded on the Track 1 of the magnetic stripe <sup>2</sup> including field separators and excluding the start sentinel, end sentinel and longitudinal redundancy check ('LRC') characters.

## DE-046 Amounts fees

### Data Element: 46

**Format: AN..216, LLLVAR**

### Description

Fees associated with this transaction. This is a constructed data element composed of up to six sets of 36-digit values. Each set of values shall consist of four parts.

**Table 2.10. DE 46 subfields**

Name	Format
Fee Type	N2 <ul style="list-style-type: none"> <li>• <b>00</b> Transaction fee</li> <li>• <b>07</b> Card Acceptor Service fee</li> </ul>
Amount Fee	N13
Conversion rate	N8
Amount reconciliation fee	N13

<sup>2</sup>See ISO-7813

## DE-049 Verification data

### Data Element: 49

### Format: B..9999, LLLLVAR

### Description

The *verification data* data element is a composite data element containing additional data used to support the identification of someone (e.g. cardholder) or something (e.g. account existence) through the use of address verification, account verification or other identification such as a national ID, driver's license, CVV2, CVC2, 4DBC, etc.).

**Table 2.11. DE 49 subfields, Dataset identifier 71**

Dataset bit	Name	Format	Representation
1	Continuation bit		
2	Card verification data		N4
3	Cardholder billing street address		ANS 40
4	Cardholder billing postal code		ANS 10
5	Cardholder billing address compressed		ANS 16
6	Additional identification type		N1
7	Additional identification reference number	LLVAR	ANS..30
8-15	Reserved for ISO use		
16	Multiple TLV sub-elements	LLLVAR	B..255

**Table 2.12. DE 49 subfields, Dataset identifier 72**

Dataset bit	Name	Format	Representation
1	Continuation bit		
2	Address verification result code		AN1
3-15	Reserved for ISO use		ANS 40
16	Multiple TLV sub-elements	LLLVAR	B..255

## DE-052 PIN Block

### Data Element: 52

### Format: B8

### Description

PIN related data in ISO 9564-1 format used to identify the cardholder



## DE-053 Security Related Control Information

**Data Element: 53**

**Format: B..48, LLVAR**

### Description

This field contains the card's security code as printed in the [front/back] of the card (zero-padded, right-justified).

This security code is a 3- or 4- digit value printed on the card or signature strip, but not encoded on the magnetic stripe.

## DE-054 Additional Amount(s)

**Data Element: 54**

**Format: AN..126, LLLVAR**

### Description

This is a constructed data element composed of up to six 21-digit amounts.

**Table 2.13. DE 54 subfields**

Name	Format
Account Type	N2 (see the section called “DE-003 Processing Code”)
Amount Type	N2 <ul style="list-style-type: none"><li>• <b>01</b> Account ledger/current balance</li><li>• <b>02</b> Account available balance</li><li>• <b>07</b> Destination Account ledger balance</li><li>• <b>08</b> Destination Account available balance</li><li>• <b>20</b> Amount remaining this cycle.</li><li>• <b>40</b> Amount cash.</li><li>• <b>42</b> Amount surcharge.</li></ul>
Currency Code	N3
Currency minor unit	N1
Amount Sign	A1 - c for Credit, d for Debit
Value amount	N12

## DE-056 Original data elements

## Data Element: 56

**Format: AN..41, LLVAR**

### Description

Key data elements contained in the original message. Provided in reversal transactions. This is a constructed data element composed of four sub elements:

- Original Protocol version and Message Type Identifier (MTI), N4  
See: the section called “MTI - Message Type Identifier”
- Original System Trace Audit Number (STAN), N12  
See: the section called “DE-011 System Trace Audit Number (STAN)”
- Original Date and Time Local Transaction in UTC (CCYYMMDDhhmmss), N14  
See: the section called “DE-012 Date and time local transaction”
- Original Acquiring Institution Identification Code, N..11  
See: the section called “DE-032 Acquiring institution identification code”

## DE-059 Transport data

**Data Element: 59**

**Format: AN..999, LLLVAR**

### Description

Contains data from the originator of the message that shall be returned unaltered in a response message.

## DE-063 Display message

**Data Element: 63**

**Format: AN..999, LLLVAR**

### Description

Display message associated with the result code (see the section called “DE-039 Result Code”) for the `locale` name specified in the request.

`locale` names are defined at jPOS Common Message Format configuration time.

## DE-068 Batch/file transfer message control

**Data Element: 68**

**Format: A9**

### Description

Used in settlement message to transmit the terminal's batch number.

## DE-072 Data record

**Data Element: 72**

**Format: B..9999, LLLLBNARY**

### Description

Other data required to be passed to support an administrative or file action message.

## DE-074 Reconciliation data primary

**Data Element: 74**

**Format: N78**

### Description

Number and amount values required to complete the reconciliation of financial totals. This is a constructed data element composed of 6 amount/counter pairs

**Table 2.14. DE 74 subfields**

Name	Format
Credits amount	N16
Credits number	N10
Credits chargeback amount	N16
Credits chargeback number	N10
Credits reversal amount	N16
Credits reversal number	N10
Debits amount	N16
Debits number	N10

Name	Format
Debits chargeback amount	N16
Debits chargeback number	N10
Debitss reversal amount	N16
Debits reversal number	N10

## DE-097 Amount, Net reconciliation

### Data Element: 97

### Format: N21

### Description

The net value (in the indicated currenncy) of all gross amounts. Net reconciliation amount is a constructed data element of three parts totalling 21 positions:

- ISO-4217 Currency code, N3
- Currency minor unit, N1
- Net reconciliation Transaction, N17

## DE-100 Receiving institution identification code

### Data Element: 100

### Format: N..11, LLVAR

### Description

A code identifying the receiving institution.

## DE-101 File Name

### Data Element: 101

### Format: AN..99, LLVAR

### Description

The actual or abbreviated name of the file being accessed by the transaction.

## **DE-102 Account identification 1**

**Data Element: 102**

**Format: AN..28, LLVAR**

### **Description**

Used to reference a source account in a transfer transaction.

## **DE-103 Account identification 2**

**Data Element: 103**

**Format: AN..28, LLVAR**

### **Description**

Used to reference a destination account in a transfer transaction.

## **DE-111 Discretionary handback data**

**Data Element: 111**

**Format: B..9999, LLLLBNARY**

### **Description**

Optional user field to be echoed back by the jPOS Common Message Format based system.

## **DE-112 Discretionary transport data**

**Data Element: 112**

**Format: B..9999, LLLLBNARY**

### **Description**

Optional user field to be handled by the jPOS Common Message Format based system and transmitted to Destination Stations

## **DE-113 jCard-specific data elements**

## Data Element: 113

**Format: B..9999, LLLL**BINARY

### Description

**jCard** uses data element 113 to hold application specific data elements. See Chapter 3, *jCard Data Elements* for details.

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# Chapter 3. jCard Data Elements

## DE-113.2 Protocol Version

**Data Element: 113.2**

**Format: AN..20, LLVAR**

### Description

jPOS-CMF version used by client

## DE-113.3 First Name

**Data Element: 113.3**

**Format: AN..40, LLVAR**

### Description

Customer/Contact First name

## DE-113.4 Middle name

**Data Element: 113.4**

**Format: AN..40, LLVAR**

### Description

Customer/Contact Middle name

## DE-113.5 Lastname

**Data Element: 113.6**

**Format: AN..40, LLVAR**

### Description

Customer/Contact Lastname

## **DE-113.6 Secondary lastname**

**Data Element: 113.6**

**Format: AN..40, LLVAR**

### **Description**

Customer/Contact secondary lastname

## **DE-113.7 Email**

**Data Element: 113.7**

**Format: AN..20, LLVAR**

### **Description**

Customer/Contact email address

## **DE-113.8 Status flags**

**Data Element: 113.8**

**Format: B 1**

### **Description**

This is a flags field, individual flag values are:

- **0x0001** - ACTIVE
- **0x0002** - SUSPENDED

## **DE-113.9 Honorific**

**Data Element: 113.9**

**Format: AN..10, LLVAR**

### **Description**

Customer/Contact honorific



## **DE-113.10 Gender**

**Data Element: 113.10**

**Format: AN 1**

### **Description**

'M' for male, 'F' for female.

## **DE-113.11 Address 1**

**Data Element: 113.11**

**Format: AN..40, LLVAR**

### **Description**

Customer/Merchant/Contact address 1

## **DE-113.12 Address 2**

**Data Element: 113.12**

**Format: AN..40, LLVAR**

### **Description**

Customer/Merchant/Contact address 2

## **DE-113.13 City**

**Data Element: 113.13**

**Format: AN..40, LLVAR**

### **Description**

Customer/Merchant/Contact city

## **DE-113.14 State code**

## **Data Element: 113.14**

**Format: AN 2**

### **Description**

US-specific state code (used for US contacts only).

## **DE-113.15 Zipcode**

**Data Element: 113.15**

**Format: AN..10, LLVAR**

### **Description**

Customer/Merchant/Contact zip / postal code

## **DE-113.16 Country code**

**Data Element: 113.16**

**Format: AN 2**

### **Description**

Customer/Merchant/Contact ISO-3166 two-letter country code.

## **DE-113.17 Phone**

**Data Element: 113.17**

**Format: AN..20, LLVAR**

### **Description**

Customer/Merchant/Contact primary phone number

## **DE-113.18 Notes**

**Data Element: 113.18**

**Format: AN..99, LLVAR**

## **Description**

General purpose notes field

## **DE-113.19 Dates**

**Data Element: 113.19**

**Format: N..32, LLVAR**

## **Description**

General purpose date(s) field in 'YYYYMMDD' format. Length is multiple of 8.

## **DE-113.20 Alternate Identifier**

**Data Element: 113.20**

**Format: AN..64, LLVAR**

## **Description**

Application-specific alternate customer identifier.

## **DE-113.21 Card Product ID**

**Data Element: 113.21**

**Format: N..16, LLNUM**

## **Description**

Application-specific card product identifier.

## **DE-113.22 UUID(s)**

**Data Element: 113.22**

**Format: AN..221**

## Description

General purpose UUID(s) - this field supports up to six comma-separated UUIDs.

## DE-113.23 SSN

**Data Element: 113.23**

**Format: A 11**

## Description

Social Security Number in XXX-XX-XXXX

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# Chapter 4. Transaction Definition

## Authorization / Balance Inquiry

Depending on the DE-024 Function Code (see the section called “DE-024 Function Code” and Appendix C, *Function codes*) this transaction class can be used for:

- Balance Inquiry / Mini-Statement
- Authorization
- Verification (MTI 104)

**Table 4.1. Authorization**

Field	Description	Value	Req	Resp
<b>MTI</b>	Message Type indicator		<b>100</b>	<b>110</b>
<b>2</b>	DE-002 Primary Account Number (PAN)		07	16
<b>3</b>	DE-003 Processing Code		M	27
<b>4</b>	DE-004 Amount transaction		26	26
<b>7</b>	DE-007 Date and time transmission		30	30
<b>11</b>	DE-011 System Trace Audit Number (STAN)		M	ME
<b>12</b>	DE-012 Date and time local transaction		M	ME
<b>13</b>	DE-013 Date effective		02	
<b>14</b>	DE-014 Expiration date		02	
<b>18</b>	DE-018 Message Error Indicator			36
<b>21</b>	DE-021 Transaction life cycle identification data		33	33
<b>22</b>	DE-022 Point-of-Service data code		M	
<b>23</b>	DE-023 jCard Sequence Number		02	
<b>24</b>	DE-024 Function Code		M	
<b>26</b>	DE-026 Merchant Category Code		M	
<b>30</b>	DE-030 Amounts original		O	O
<b>32</b>	DE-032 Acquiring institution identification code		O	O
<b>35</b>	DE-035 Track 2 data		06	
<b>38</b>	DE-038 Approval Code			31
<b>39</b>	DE-039 Result Code			M
<b>41</b>	DE-041 Card Acceptor Terminal ID ('TID')		15	16
<b>42</b>	DE-042 Card Acceptor Identification Code ('MID')		15	16
<b>43</b>	DE-043 Card acceptor name/location		O	O
<b>45</b>	DE-045 Track 1 data		06	
<b>46</b>	DE-046 Amounts fees		O	O
<b>49</b>	DE-049 Verification data		45	45
<b>59</b>	DE-059 Transport data		O	16

Field	Description	Value	Req	Resp
<b>63</b>	DE-063 Display message		O	ME
<b>111</b>	DE-111 Discretionary handback data		O	ME

### Note

See Appendix A, *Conditional Codes* for condition details.

## Financial

Depending on the DE-024 Function Code (see the section called “DE-024 Function Code” and Appendix C, *Function codes*) this transaction class can be used for:

- POS Purchase
- Cash Withdrawal
- Voids
- Payment/Deposit
- Account transfer
- Refund/Return

**Table 4.2. Authorization**

Field	Description	Value	Req	Resp
<b>MTI</b>	Message Type indicator		<b>200</b>	<b>210</b>
<b>2</b>	DE-002 Primary Account Number (PAN)		07	16
<b>3</b>	DE-003 Processing Code		M	27
<b>4</b>	DE-004 Amount transaction		26	26
<b>7</b>	DE-007 Date and time transmission		30	30
<b>11</b>	DE-011 System Trace Audit Number (STAN)		M	ME
<b>12</b>	DE-012 Date and time local transaction		M	ME
<b>13</b>	DE-013 Date effective		02	
<b>14</b>	DE-014 Expiration date		02	
<b>18</b>	DE-018 Message Error Indicator			36
<b>21</b>	DE-021 Transaction life cycle identification data		33	33
<b>22</b>	DE-022 Point-of-Service data code		M	
<b>23</b>	DE-023 jCard Sequence Number		02	
<b>24</b>	DE-024 Function Code		M	
<b>26</b>	DE-026 Merchant Category Code		M	
<b>30</b>	DE-030 Amounts original		O	O
<b>32</b>	DE-032 Acquiring institution identification code		O	O
<b>35</b>	DE-035 Track 2 data		06	
<b>38</b>	DE-038 Approval Code			31

Field	Description	Value	Req	Resp
39	DE-039 Result Code			M
41	DE-041 Card Acceptor Terminal ID ('TID')		15	16
42	DE-042 Card Acceptor Identification Code ('MID')		15	16
43	DE-043 Card acceptor name/location		O	O
45	DE-045 Track 1 data		06	
46	DE-046 Amounts fees		O	O
49	DE-049 Verification data		45	45
59	DE-059 Transport data		O	16
63	DE-063 Display message		O	ME
111	DE-111 Discretionary handback data		O	ME

### Note

See Appendix A, *Conditional Codes* for condition details.

## Completion / Partial Completion

**Table 4.3. Completion**

Field	Description	Value	Req	Resp
MTI	Message Type indicator		220	230
2	DE-002 Primary Account Number (PAN)		07	16
3	DE-003 Processing Code		M	ME
4	DE-004 Amount transaction		M	M
7	DE-007 Date and time transmission		30	30
11	DE-011 System Trace Audit Number (STAN)		M	ME
12	DE-012 Date and time local transaction		M	ME
13	DE-013 Date effective		02	
14	DE-014 Expiration date		02	
18	DE-018 Message Error Indicator			36
21	DE-021 Transaction life cycle identification data		33	33
22	DE-022 Point-of-Service data code		M	
23	DE-023 jCard Sequence Number		02	
24	DE-024 Function Code		M	
25	DE-025 Reason Code		M	
26	DE-026 Merchant Category Code		M	
30	DE-030 Amounts original		O	O
32	DE-032 Acquiring institution identification code		O	O
37	DE-032 Acquiring institution identification code		O	ME
38	DE-038 Approval Code			31

Field	Description	Value	Req	Resp
39	DE-039 Result Code		M	M
41	DE-041 Card Acceptor Terminal ID ('TID')		15	16
42	DE-042 Card Acceptor Identification Code ('MID')		15	16
43	DE-043 Card acceptor name/location		O	O
46	DE-046 Amounts fees		O	O
59	DE-059 Transport data		O	16
63	DE-063 Display message		O	ME
111	DE-111 Discretionary handback data		O	ME

### Note

See Appendix A, *Conditional Codes* for condition details.

## Reversals

**Table 4.4. Reversals**

Field	Description	Value	Req	Resp
MTI	Message Type indicator		420	430
2	DE-002 Primary Account Number (PAN)		07	16
3	DE-003 Processing Code		03	16
4	DE-004 Amount transaction		M	M
7	DE-007 Date and time transmission		30	30
11	DE-011 System Trace Audit Number (STAN)		M	ME
12	DE-012 Date and time local transaction		M	ME
18	DE-018 Message Error Indicator			36
21	DE-021 Transaction life cycle identification data		33	33
24	DE-024 Function Code		M	
25	DE-025 Reason Code		M	
30	DE-030 Amounts original		O	O
32	DE-032 Acquiring institution identification code		O	O
56	DE-056 Original data elements		M	
59	DE-059 Transport data		O	16
63	DE-063 Display message		O	ME
111	DE-111 Discretionary handback data		O	ME

### Note

See Appendix A, *Conditional Codes* for condition details.

## Settlement



**Table 4.5. Settlement**

Field	Description	Value	Req	Resp
<b>MTI</b>	Message Type indicator		<b>540</b>	<b>550</b>
<b>7</b>	DE-007 Date and time transmission		M	ME
<b>11</b>	DE-011 System Trace Audit Number (STAN)		M	ME
<b>12</b>	DE-012 Date and time local transaction		M	ME
<b>13</b>	DE-013 Date effective		02	
<b>24</b>	DE-024 Function Code		M	
<b>41</b>	DE-041 Card Acceptor Terminal ID ('TID')		15	16
<b>68</b>	DE-068 Batch/file transfer message control		M	ME
<b>74</b>	DE-074 Reconciliation data primary		M	ME
<b>97</b>	DE-097 Amount, Net reconciliation		M	ME
<b>111</b>	DE-111 Discretionary handback data		O	ME

**Note**

See Appendix A, *Conditional Codes* for condition details.

## Add Record

This is a general purpose record creation transaction that can be used to create Cards, Customers, Accounts, or application specific entities.

**Table 4.6. Add Record**

Field	Description	Value	Req	Resp
<b>MTI</b>	Message Type indicator		<b>304/305</b>	<b>314</b>
<b>2</b>	DE-002 Primary Account Number (PAN)		28	16
<b>7</b>	DE-007 Date and time transmission		30	30
<b>11</b>	DE-011 System Trace Audit Number (STAN)		M	ME
<b>12</b>	DE-012 Date and time local transaction		M	ME
<b>18</b>	DE-018 Message Error Indicator			36
<b>24</b>	DE-024 Function Code	301	M	
<b>25</b>	DE-025 Reason Code		28	
<b>33</b>	DE-033 Forwarding institution identification code		O	O
<b>42</b>	DE-042 Card Acceptor Identification Code ('MID')		O	O
<b>39</b>	DE-039 Result Code			M
<b>59</b>	DE-059 Transport data			16
<b>72</b>	DE-072 Data record (Application specific record data)		O	16
<b>101</b>	DE-101 File Name		29	
<b>111</b>	DE-111 Discretionary handback data		O	16

Field	Description	Value	Req	Resp
113	DE-113 jCard-specific data elements		O	16

### Note

See Appendix A, *Conditional Codes* for condition details.

## Add Customer

This transaction can be used to create an activate a Customer (aka Cardholder) in the system.

**Table 4.7. Add Record**

Field	Description	Value	Req	Resp
MTI	Message Type indicator		304/305	314
2	DE-002 Primary Account Number (PAN)	Customer Primary Account Number. If not present, an auto-generated ID will be used and returned on the 314 response.	O	M
7	DE-007 Date and time transmission		30	30
11	DE-011 System Trace Audit Number (STAN)		M	ME
12	DE-012 Date and time local transaction		M	ME
18	DE-018 Message Error Indicator			36
24	DE-024 Function Code	301	M	
25	DE-025 Reason Code		28	
32	DE-032 Acquiring institution identification code		O	O
42	DE-042 Card Acceptor Identification Code ('MID')		O	O
39	DE-039 Result Code			M
59	DE-059 Transport data			16
72	DE-072 Data record			16
101	DE-101 File Name	The literal "CUSTOMER"	M	
111	DE-111 Discretionary handback data		O	16
113	DE-113 jCard-specific data elements		O	16

### Note

See Appendix A, *Conditional Codes* for condition details.

## Add Merchant

Used to create a Merchant.

**Table 4.8. Add Record**

Field	Description	Value	Req	Resp
MTI	Message Type indicator		304/305	314

Field	Description	Value	Req	Resp
7	DE-007 Date and time transmission		30	30
11	DE-011 System Trace Audit Number (STAN)		M	ME
12	DE-012 Date and time local transaction		M	ME
18	DE-018 Message Error Indicator			36
24	DE-024 Function Code	301	M	
25	DE-025 Reason Code		28	
32	DE-032 Acquiring institution identification code		O	O
42	DE-042 Card Acceptor Identification Code ('MID')		O	O
39	DE-039 Result Code			M
42	DE-042 Card Acceptor Identification Code ('MID')		M	M
59	DE-059 Transport data			16
72	DE-072 Data record (Application specific record data)		O	16
101	DE-101 File Name	The literal "MERCHANT"	M	
111	DE-111 Discretionary handback data		O	16

### Note

See Appendix A, *Conditional Codes* for condition details.

---

# Appendix A. Conditional Codes

The following table specifies the Condition Codes used in this documentation.

**Table A.1. Data element condition codes**

Type	Comment
O	Optional.
S	Special field ( <i>see detail below</i> )
M	Mandatory.
ME	Mandatory echo. jPOS Common Message Format echoes the same data (if present) as the original message.
00	Reserved for ISO use
01	Mandatory if fees affect reconciliation.
02	Mandatory if information is available and not read electronically from the card (e.g. manual card entry)
03	Mandatory, contains the same data as the original authorization (1xx) or financial presentment (2xx) message.
04	Mandatory if DE-006 Amount cardholder billing or DE-008 Amount cardholder billing fee is present.
05	Mandatory when the reconciliation and transaction currencies differ and this data element was not provided in the request or advice message.
06	Mandatory if track data is captured at the point of service.
07	Mandatory if the Primary account number conforms to International Standard ISO 7812.
08	Mandatory in a replacement, previously authorised, retrieval, representment, partial reversal or partial chargeback. Mandatory in a supplementary authorization, if available.
09	Reserved for ISO use
10	Mandatory when the forwarding institution is not the same as the institution originating the message.
11	Reserved for ISO use
12	Mandatory if transaction affects reconciliation and this data element was not provided in the request or advice message.
13	Mandatory if the reconciliation is not in balance. Contains the value calculated by the institution sending the reconciliation advice response.
14	Mandatory if the transaction affects reconciliation and checkpoint reconciliation is used and this data element was not provided in the request or advice message.
15	Mandatory if available.
16	Mandatory in a response message if the data element was present in the original request or advice message. If present, it shall contain the same data as the original message.
17	Mandatory in the advice/notification if the data element was present in the original authorization / financial presentment, request / advice notification message. If present, it shall contain the same data as the original message.
18	Mandatory if the approval code is required to be less than six characters.
19	Mandatory when the receiving institution is not the same as the final destination of the message.

Type	Comment
20	Mandatory when the institution that processed (approved or denied) an authorization or financial presentment is not the same institution identified in the primary account number.
21	Mandatory if a partial approval, declined or rejected transaction.
22	Mandatory if different from Date and time local transaction.
23	Mandatory if transaction affects reconciliation and checkpoint reconciliation used.
24	Mandatory if this message is used for cutover or checkpoint reconciliation.
25	Mandatory if this message is used for checkpoint reconciliation.
26	Mandatory for all processing codes except for inquiry services (i.e. processing code 3xxx).
27	Mandatory, shall echo the first two positions of the processing code in the original message.
28	Mandatory if function code indicates card administration.
29	Mandatory if function code is other than card administration.
30	Mandatory in real time transactions.
31	Mandatory if approved.
32	Mandatory if batch/file transfer control data elements do not uniquely identify the file to be loaded.
33	Mandatory once assigned, in all subsequent messages in this transaction (e.g. responses, acknowledgements, advices, notifications and instructions) and all messages in related transactions (e.g. financial presentments, chargebacks, reversals and retrievals). Shall contain the same value as original assigned.
34	Mandatory if fee collection is relevant to the life cycle of the transaction.
35	Mandatory in a network management message when <i>Function code</i> indicates a key is being delivered.
36	Mandatory in request, response/advice, response messages if the receiver detects an error in the request/repeat or advice/repeat messages.
37	Mandatory in the error notification message if present in the messages that contained the error condition, if the receiver can parse that message.
38	Mandatory in network management messages that denotes the start or end of a file transfer.
39	Mandatory in messages which are submitted as part of a batch or file transfer.
40	Mandatory in retrieval, chargeback and fee collection messages if provided in an original financial presentment. Shall contain the same values as used in the original transaction.
41	Mandatory if DE-024 Function Code is not 650 or 651.
42	Mandatory when the transaction is an accumulation transaction and the value applies to all transactions within the accumulated total.
43	Mandatory if DE-024 Function Code is 111.
44	Mandatory if verification involves PAN.
45	Mandatory if DE-024 Function Code is 109, 110, 112 or 113.

---

# Appendix B. Result codes

The following table specifies the Result Codes associated with DE 039 (see the section called “DE-039 Result Code”).

**Table B.1. Result codes**

Code	Description
0000	Transaction Approved
0001	Honor with identification
0002	Approved for partial amount
0003	Approved (VIP)
1001	Card Expired
1002	Card Suspicious
1003	Card Suspended
1004	Card Stolen - pickup
1005	Card Lost
1011	Card Not Found
1012	Cardholder Not Found
1014	Account Not Found
1015	Invalid Request
1016	Not Sufficient Funds
1017	Previously Reversed
1018	Previously Reversed
1019	Further activity prevents reversal
1020	Further activity prevents void
1021	Original transaction has been voided
1802	Missing fields
1803	Extra fields exist
1804	Invalid card number
1806	Card not active
1808	Card not configured
1810	Invalid amount
1811	System Error, Database
1812	System Error, Transaction
1813	Cardholder not active
1814	Cardholder not configured
1815	CardHolder expired
1816	Original not found
1817	Usage Limit Reached
1818	Configuration error
1819	Invalid terminal
1820	Inactive terminal

<b>Code</b>	<b>Description</b>
1821	Invalid merchant
1822	Duplicate entity
1823	Invalid Acquirer

# Appendix C. Function codes

The following table specifies the Function Codes associated with DE 024 (see the section called “DE-024 Function Code”).

**Table C.1. Function codes**

Range	Code	Description
000-099 Reserved for ISO use	000-099	Reserved
100-199 Used in 100, 101, 120, 121, and 140 messages to indicate type of authorization or verification transaction.	100	Original authorization - amount accurate
	101	Original authorization - amount estimated
	102	Replacement authorization - amount accurate
	103	Replacement authorization - amount estimated
	108	Inquiry
	113	Account verification
	114-159	Reserved for ISO use
	160-179	Reserved for national use
	180	Reserved for private use
	181	Partial authorization supported by terminal
	182	jCard private use: DE-002 Primary Account Number (PAN) contains customer ID or DE-102 Account identification 1 and DE-103 Account identification 2 contains source and destination accounts.
	183	jCard private use: DE-002 Primary Account Number (PAN) contains token ID
184	jCard private use: DE-113.20 Alternate Identifier contains wallet ID	
185-199	Additional reserved for private use	
200-299 Used in 200, 201, 220, 221, and 240 messages to indicate type of financial presentment.	200	Original financial presentment request/advice
	201	Previously approved authorization - amount same
	202	Previously approved authorization - amount differs
	218-259	Reserved for ISO use
	260-279	Reserved for national use
	280-299	Reserved for private use
300-399 Used in 304, 305, 324, 325, 34, 344, 350, 354, 362, 364, 372 and 374 messages to indicate file action required; use	300	Reserved for ISO use
	301	Add record
	302	Change record
	303	Delete record



Range	Code	Description
302 when fields within a record are being replaced; if the entire record is being changed, code 304 is recommended.	304	Replace record
	305	Inquiry
	306	Replace file
	309	Card administration
	310	Other
	311-359	Reserved for ISO use
	360-379	Reserved for national use
	380-399	Reserved for private use
400-449 Used in 420, 421 and 440 messages to indicate the function of the reversal.	400	Full reversal, transaction did not complete as approved
	401	Partial reversal, transaction did not complete for full amount
	402-419	Reserved for ISO use
	420-439	Reserved for national use
	440-449	Reserved for private use

# Appendix D. Reason codes

The following table specifies the Function Codes associated with DE 025 (see the section called “DE-025 Reason Code”).

**Table D.1. Reason codes**

Range	Code	Description
0000-0999 Reserved for ISO use	0000-0999	Reserved
1000-1499 Reason for an authorization/financial presentment advice / notification message rather than a request message.	1000	Stand-In processing at the card issuer's option
	1001	Card issuer signed off
	1002	Card issuer timed out on original request
	1003	Card issuer unavailable
	1004	Terminal processed
	1005	ICC processed
	1006	Under floor limit
	1007	Stand-in processing at the acquirer's option
	1008	Stand-in processing at the receiver's option
	1009	Receiver signed off
	1010	Receiver timed out on original request
	1011	Receiver unavailable
	1012-1150	Reserved for ISO use
	1151-1375	Reserved for national use
	1376-1499	Reserved for private use
2000-2999 Reason for a representment	2000	Reserved for ISO use
	2001	Invalid acquirer's reference number on charge-back, documentation was received or was not required.
	2002	Non receipt of required documentation to support chargeback
	2003	Correct transaction date provided
	2004	Invalid acquirer's reference number on charge-back, documentation was received
	2005	Correct card acceptor location/description provided
	2006	Reserved for ISO use
	2007	Transaction did not exceed card acceptor floor limit
	2008	Card issuer authorised transaction
	2009	Reserved for ISO use
	2010	Reserved for ISO use
	2011	Credit previously issued
	2012	Reserved for ISO use

Range	Code	Description
	2013	Chargeback remedied, see corresponding documentation
	2014	Duplicate chargeback
	2015	Past chargeback time limit
	2016	Requested transaction documentation provided (hardship variance)
	2017	Invalid member message text
	2018	Correct card acceptor category code provided
	2019	Authorization advised suspicious
	2020	No authorization request required or attempted
	2021	Account not listed on the applicable warning bulleting as of the transaction date
	2022	Documentation received was illegible
	2023	Documentation received was invalid/incomplete
	2024-2399	Reserved for ISO use
	2400-2699	Reserved for national use
	2700-2999	Reserved for private use
3000-3999 Reason for a file action	3000	Lost card
	3001	Stolen card
	3002	Undelivered card
	3003	Counterfeit card
	3004	Other
	3005-3399	Reserved for ISO use
	3400-3699	Reserved for national use
	3700-3999	Reserved for private use
4000-4499 Reason for a reversal	4000	Customer cancellation
	4001	Unspecified, no action taken
	4002	Suspected malfunction
	4003	Format error, no action taken
	4004	Completed partially
	4005	Original amount incorrect
	4006	Response received too late
	4007	Card acceptor device unable to complete transaction
	4008	Deposit out of balance
	4009	No check in envelope
	4010	Payment out of balance
	4011	Deposit out of balance/applied contents
	4012	Payment out of balance/applied contents
	4013	Unable to deliver message to point of service
	4014	Suspected malfunction/card retained
	4015	Suspected malfunction/card returned

Range	Code	Description
	4016	Suspected malfunction/track 3 not updated
	4017	Suspected malfunction/no cash dispensed
	4018	Timed-out at taking money/no cash dispensed
	4019	Timed-out at taking card/card retained and no cash dispensed
	4020	Invalid response, no action taken
	4021	Timeout waiting for response
	4022-4199	Reserved for ISO use
	4200-4350	Reserved for national use
	4351-4499	Reserved for private use
4500-4999 Reason for a chargeback	4500	Reserved for ISO use
	4501	Requested transaction information not received
	4502	Requested/required information illegible or missing
	4503-4506	Reserved for ISO use
	4507	Warning bulleting file
	4508	Requested/required authorization not obtained
	4509-4511	Reserved for ISO use
	4512	Account number not on file
	4513-4523	Reserved for ISO use
	4524	Earlier warning bulletin protection
	4525-2530	Reserved for ISO use
	4531	Transaction amount differs
	4532-4533	Reserved for ISO use
	4534	Duplicate processing
	4535	Card not valid or expired
	4536	Reserved for ISO use
	4537	No cardholder authorization
	4538-4539	Reserved for ISO use
	4540	Fraudulent processing of transaction
	4541	Cancelled recurring transaction
	4542	Late presentment
	4543-4545	Reserved for ISO use
	4546	Correct transaction currency code not provided
	4547	Exceeds floor limit, not authorised / fraudulent transaction
	4548	Reserved for ISO use
	4549	Questionable card acceptor activity
	4550	Credit posted as a purchase
	4551-4552	Reserved for ISO use
	4553	Not as described
	4554	Cardholder dispute, not elsewhere classified

Range	Code	Description
	4555	Non receipt of merchandise
	4556	Defective merchandise
Reason for a chargeback (continued)	4557	Card activated telephone transaction
	4558	Reserved for ISO use
	4559	Services not rendered
	4560	Credit not processed
	4561	Reserved for ISO use
	4562	Counterfeit transaction, magnetic stripe authorization fraud
	4563	Non receipt of required documentation to support representment
	4564	Documentation received was illegible
	4565	Documentation received was invalid/incomplete
	4566	Chargeback contained a valid acquirer's reference number
	4567	Invalid acquirer's reference number on representment, documentation was received or was not required
	4568	Invalid acquirer's reference number on representment, documentation was received
	4569-4572	Reserved for ISO use
	4573	Expired card
	4574-4577	Reserved for ISO use
	4578	Ineligible transaction
	4579	Requested transaction receipt not received
	4580	Processing error
	4581	Missing imprint
	4582	Reserved for ISO use
	4583	Not possession of card
	4584	Missing signature
	4585	Reserved for ISO use
	4586	Alteration of amount
	4587	Domestic transaction receipt processing violation
	4588-4589	Reserved for ISO use
	4590	Non receipt of merchandise, non receipt of cash at ATM or load transaction value at ATM or load device
	4591-4593	Reserved for ISO use
Reason for a chargeback (continued)	4594	Cancelled guaranteed reservation
	4595	Advance lodging deposit
	4596	Transaction exceeds limited amount
	4597-4649	Reserved for ISO use

Range	Code	Description
	4650-4749	Reserved for national use
	4750-4999	Reserved for private use
5000-5999 Reason for a reconciliation	5000-5299	Reserved for ISO use
	5300-5599	Reserved for national use
	5600-5999	Reserved for private use
6000-6499 Reason for a retrieval or re- trieval fulfilment	6001-6004	Reserved for ISO use
	6005	Cardholder does not agree with amount billed
	6006-6020	Reserved for ISO use
	6021	Cardholder does not recognize transaction
	6022	ICC transaction certificate and associated data requested
	6023	Cardholder needs information for personal records
	6024-6027	Reserved for ISO use
	6028	Request for copy bearing signature
	6029	Travel and entertainment document request
	6030-6031	Reserved for ISO use
	6032	Copy request because original lost in transit
	6033-6034	Reserved for ISO use
	6035	Written cardholder request for original due to inadequate copy of mail/phone order or recurring transaction receipt
	6036	Legal process request for original, e.g. a subpoena
	6037	Received copy illegible
	6038	Paper/handwriting analysis request
	6039-6040	Reserved for ISO use
	6041	Fraud investigation
	6042	Potential arbitration, chargeback or compliance documentation required
	6043	Retrieval not fulfilled - not able to trace original transaction
	6044	Retrieval not fulfilled - invalid reference number
	6045	Retrieval not fulfilled - reference number/PAN incompatible
	6046	Requested documentation supplied
	6047	Retrieval cannot be fulfilled - required/requested documentation is not available
	6048	Retrieval will not be fulfilled - request for an item that is not required to be provided
	6049	Retrieval cannot be fulfilled - ICC transaction certificate and associated data is not available
	6050-6199	Reserved for ISO use

Range	Code	Description
Reason for a retrieval or retrieval fulfilment (continued)	6200-6299	Reserved for national use
	6300-6499	Reserved for private use
6500-6999 Reason for an administrative message	6500-6599	Reserved for ISO use
	6600-6799	Reserved for national use
	6800-6999	Reserved for private use
7000-7999 Reason for a fee collection message	7000-7299	Reserved for ISO use
	7600-7599	Reserved for national use
	7600-7999	Reserved for private use
8000-8099 Reason for a network management message	8000	Start batch/file transfer, no recovery procedure
	8001	Start batch/file transfer, recovery procedure
	8002	End batch/file
	8003-8059	Reserved for ISO use
	8060-8069	Reserved for national use
	8070-8099	Reserved for private use
8100-8199 Reason for a key exchange message	8100	Standard key exchange/activation key life cycle
	8101	Standard key exchange/activation keys out of sync
	8102	Standard key exchange/activation security reasons
	8103	Standard key exchange key deactivation
	8104	Standard key exchange verification key life cycle
	8105	Standard key exchange keys out of sync
	8103-8159	Reserved for ISO use
	8160-8169	Reserved for national use
8200-8999 Reserved	8170-8199	Reserved for private use
	8200-8399	Reserved for ISO use
	8400-8699	Reserved for national use
9000-9999 Reserved	8700-8999	Reserved for private use
	9000-9299	Reserved for ISO use
	9300-9599	Reserved for national use
	9600-9999	Reserved for private use

---

# Appendix E. Message error codes

The following table specifies the Message Error Codes associated with DE 018 (see the section called “DE-018 Message Error Indicator”).

**Table E.1. Message error codes**

Code	Description
0001	Required data element missing
0002	Invalid length
0003	Invalid value
0004	Amount format error
0005	Date format error
0006	Account format error
0007	Name format error
0008	Other format error
0009	Data inconsistent with POS data code
0010	Inconsistent data, does not match original request
0011	Other inconsistent data
0012	Recurring data error
0013	Customer vendor format error
0014-3999	Reserved for ISO use
4000-5999	Reserved for national use
6000-9999	Reserved for private use



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# Glossary

<b>MID</b>	Merchant ID (see the section called “DE-042 Card Acceptor Identification Code ('MID')”).
<b>MTI</b>	Message Type Indicator (see the section called “MTI - Message Type Identifier”).
<b>TID</b>	Terminal ID (see the section called “DE-041 Card Acceptor Terminal ID ('TID')”).
<b>TTC</b>	Transaction Type Code (see the section called “DE-003 Processing Code”).

# Appendix F. Revision History

**Table F.1. Revision History**

Date	Version	Author	Description
Dec, 2013	1.0.10	apr	<ul style="list-style-type: none"> <li>Added DE 100, receiving institution code</li> <li>Re-enabled DE 53</li> </ul>
Jul, 2013	1.0.9	apr	<ul style="list-style-type: none"> <li>Added jCard field 113.23, SSN</li> </ul>
Mar, 2013	1.0.8	apr	<ul style="list-style-type: none"> <li>Added field 15, corrected field 13</li> </ul>
Jan, 2013	1.0.7	apr	<ul style="list-style-type: none"> <li>Added function code 184 (jCard Wallet ID)</li> </ul>
May, 2011	1.0.6	apr	<ul style="list-style-type: none"> <li>Changed wording in the section called “DE-112 Discretionary transport data” to indicate it's a transport field, no logging is required.</li> <li>Added the section called “DE-113 jCard-specific data elements” and Chapter 3, <i>jCard Data Elements</i></li> <li>the section called “Add Record” now supports optional field the section called “DE-113 jCard-specific data elements”</li> <li>the section called “Add Record” clarifies the fact that field 2 is optional</li> <li>the section called “Add Record” uses field 33 (the section called “DE-033 Forwarding institution identification code”) instead of 32</li> </ul>
Jun 23th 2010	1.0.5	apr	Added the section called “DE-112 Discretionary transport data”
Nov 7th 2009	1.0.4	Andy Orrock	Changed references to 'begin sentinel' to 'start sentinel' in the section called “DE-035 Track 2 data”. Provided additional data element definition information for the section called “DE-007 Date and time transmission”, the section called “DE-023 jCard Sequence Number”, the section called “DE-024 Function Code”, the section called “DE-025 Reason Code”, the section called “DE-026 Merchant Category Code”, the section called “DE-032 Acquiring institution identification code”, the section called “DE-041 Card Acceptor Terminal ID ('TID')”, the section called “DE-042 Card Acceptor Identification Code ('MID')”, the section called “DE-043 Card acceptor name/location”, the section called “DE-046 Amounts fees”, the section called “DE-056 Original data elements”, the section called “DE-059 Transport data”, the section called “DE-074 Reconciliation data primary”, the section called “DE-097 Amount, Net

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## Revision History

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Date	Version	Author	Description
			reconciliation” and the section called “DE-101 File Name”
Oct 15th 2009	1.0.3	apr	Added the section called “DE-068 Batch/file transfer message control” and the section called “Settlement”.
Aug 24th 2009	1.0.2	David Bergert - bergert@olsdallas.com	Added Result Code Table
Aug 2009	1.0.1	apr	Added fields the section called “DE-074 Reconciliation data primary” and the section called “DE-097 Amount, Net reconciliation” used in reconciliation messages.
Aug 2009	1.0.0	apr	Assorted additions, initial public release
Aug 2008	r3382	apr	Initial internal revision

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# Appendix G. License terms



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