SECTION 4   ISO 8583–1987 DATA ELEMENT DEFINITIONS

ISO 8583–1987 Data Element Definitions

ISO 8583–1987 Data Element Definitions

OVERVIEW

This section of the *MDS Operations Manual* provides a detailed definition of all data elements that are used within ISO 8583–1987 online EFT application messages. Information is presented in the following order:

1. An explanation of the notation used throughout this section to describe all data element attributes.

2. A summary list of all ISO 8583–1987 data elements in the order of their ISO-assigned bit map numbers, including annotation of those data elements which are currently *not implemented* within the ISO 8583–1987 specification.

3. A detailed definition of each EFT message data element, presented in the order of the data element bit map number. Information provided for each data element includes the following:

    - Data element definition.

    - Data element usage.

    - Data element formats, including data representation attributes, data field format, and data field length.

    - Data element values or field edits indicating the specific value(s) or permissible range of values that may be present within the data element.

    - Product application notes, where applicable, that detail unique, product-specific, or message-specific usage of the data element.

BIT MAPS

All ISO 8583–1987 messages are variable length, with a bit map scheme used to indicate the presence or absence of additional fields in the message. Each bit map is a 64-bit string contained within an 8-byte field. The first bit in each bit map is set to "1" or "0" to indicate the presence ("1") or absence ("0") of an additional 64-bit bit map field which immediately follows the preceding bit map field.

A maximum of 2 bit maps are used in ISO 8583–1987 message formats: a "Primary" and a "secondary" bit map. Bits set to "1" or "0" in the Primary Bit map indicate the presence or absence of DE 2 through DE 64. Bits set to "1" or "0" in the Secondary Bit map indicate the presence or absence of DE 66 through DE 128. (Note: All bit positions are interpreted from left to right within each bit map; such as within the Primary Bit map the leftmost bit is "DE 1", and the rightmost bit is "DE 64").

Bit No. 1 in the Primary Bit Map and DE 65 in the Secondary Bit Map (such as the first bit in each bit map) do not have corresponding data elements; these bits are used to indicate the presence or absence of additional bit map fields in the message. If bit No. 1 is set to "1", it indicates that the Secondary Bit Map is present and that selected data elements in the range DE 66 through DE 128 are also present in the message as indicated by bit positions in the Secondary Bit Map. Bit No. 65 *must always be set to "0"*, since there are no additional bit maps defined beyond the Secondary Bit Map in the ISO 8583–1987 message specification.

All ISO 8583–1987 messages must contain a Primary Bit Map. The Secondary Bit Map is only included in a message when data elements in the range DE 66 through DE 128 are present in the message.

ANNOTATION CONVENTIONS FOR DATA ELEMENT ATTRIBUTES

The following notation conventions have been employed throughout this section to describe the attributes of ISO 8583–1987 message data elements:

General Representation

DATA REPRESENTATION ATTRIBUTES

Notation	Description
a	alphabetic characters only (MUST USE UPPER CASE LETTERS)
n	numeric characters only
s	special characters only
an	alpha and numeric characters
as	alpha and special characters
ns	numeric and special characters
ans	alpha, numeric, and special characters
b	binary data
z	magnetic stripe track-2 or track-3 data
x	character "C" or "D" to indicate "credit" or "debit" value of a dollar amount

Length Attributes

DATA LENGTH
ATTRIBUTES

Notation	Description
-digit(s)	Fixed length in number of positions.
	Example: "n-3" indicates a 3-position numeric field.
	Example: "an-10" indicates a 10-position alphanumeric field.
...digit(s)	Variable length field, with maximum number of positions specified.
	Example: "n...11" indicates a variable length numeric field of up to 11 digits.
	Example: "an...25" indicates a variable length alphanumeric field of up to 25 characters.
LLVAR	When present with a variable length field specification, this indicates that the data element contains two subfields:
	LL indicates the number of positions in the variable-length data field that follows. Length may be 1 to 99, unless otherwise restricted.
	VAR is the variable length data field.
	Example: "an...25, LLVAR" indicates a variable-length alphanumeric data field having a length of up to 25 characters.
LLLVAR	When present with a variable length field specification, this indicates that the data element contains two subfields:
	LLL indicates the number of positions in the variable-length data field that follows. Length may be 1 to 999, unless otherwise restricted.
	VAR is the variable length data field.
	Example: "an...500, LLLVAR" indicates a variable-length alphanumeric data field having a length of up to 500 characters.

Field Content Attributes

DATE AND TIME ATTRIBUTES

Notation	Description
MM	month (two digits, 01–12)
DD	day (two digits, 01–31)
YY	year (last two digits of calendar year, 00–99)
hh	hour (two digits, 00–23)
mm	minute (two digits, 00–59)
ss	second (two digits, 00–59)

CONVENTIONS FOR DATA REPRESENTATION

The data encoding conventions listed below have been adapted for all ISO 8583–1987 messages:

1. All message data element fields are aligned on byte boundaries; such as a data field cannot begin with the low order "nibble" or any bit other than the high-order bit of any byte.

2. All of the following data types are encoded using EBCDIC display character representation:

DATA TYPES

Notation	Interpretation
a	alphabetic characters
n	numeric characters
s	special characters
an	alpha and numeric characters
as	alpha and special characters
ns	numeric and special characters
ans	alpha, numeric, and special characters
z	magnetic stripe track-2 or track-3 data
x	character "C" or "D" to indicate credit or debit value of associated amount

3. All numeric (attribute n) data elements are **right-justified** with **leading zeroes** unless otherwise specified in the individual data element definitions. All other EBCDIC encoded data elements are **left-justified** with **trailing blanks** unless otherwise specified.

4. All binary (attribute **b**) data elements are constructed of bit-strings which have lengths that are an integral number of 8-bit bytes. No binary data element has a length of less than eight bits (one byte).

5. All track-2 or track-3 (attribute **z**) data elements are encoded as EBCDIC representations of the hexadecimal data specified in ISO specification 7811 and 7812. Thus, a hex "D" (binary "1101") is encoded as an EBCDIC "D" character, and so on. The LLVAR or LLLVAR length specification associated with these data elements specifies the field length in number of *bytes*.

6. All length subfields are encoded as numeric EBCDIC, right-justified with leading zeroes.

    *   Fields designated LL are 2-character numeric subfields with values from "01" to "99".

    *   Fields designated LLL are 3-character numeric subfields with values from "001" to "999".

MESSAGE DATA ELEMENTS

Table 4.1 lists all data elements implemented within the ISO 8583–1987 message standard. Indicated data elements are not currently used within MasterCard International EFT products, programs, or services supported by the ISO 8583–1987 message specification. ISO 8583–1987 messages should not contain these data elements; however, these data elements may be utilized by individual EFT financial programs at some future date.

TABLE 4.1
ISO 8583–1987 DATA ELEMENTS

Number	Name	Attributes
1	Bit map, Secondary	b-64
2	Primary Account Number	n...19; LLVAR
3	Processing Code	n-6
4	Amount, Transaction	n-12
5	Amount, Settlement	n-12
6	Amount, Cardholder Billing (not currently used)	n-12
7	Transmission Date and Time	n-10; MMDDhhmmss
8	Amount, Cardholder Billing Fee (not currently used)	n-8
9	Conversion Rate, Settlement	n-8
10	Conversion Rate, Cardholder Billing	n-8
11	System Trace Audit Number	n-6
12	Time, Local Transaction	n-6; hhmmss
13	Date, Local Transaction	n-4; MMDD
14	Date, Expiration	n-4; YYMM
15	Date, Settlement	n-4; MMDD
16	Date, Conversion	n-4; MMDD
17	Date, Capture (not currently used)	n-4; MMDD
18	Merchant Type (MCC)	n-4
19	Acquiring Institution Country Code (not currently used)	n-3

TABLE 4.1
ISO 8583–1987 DATA ELEMENTS
(continued)

Number	Name	Attributes
20	Primary Account Number, Extended, Country Code (not currently used)	n-3
21	Forwarding Institution Country Code (not currently used)	n-3
22	Point of Service Entry Mode	n-3
23	Card Sequence Number	n-3
24	Network International Identifier (not currently used)	n-3
25	Point of Service Condition Code (not currently used)	n-2
26	Point of Service PIN Capture Code	n-2
27	Authorization Identification Response Length (not currently used)	n-1
28	Amount, Transaction Fee	x+n-8
29	Amount, Settlement Fee	x+n-8
30	Amount, Transaction Processing Fee (not currently used)	x+n-8
31	Amount, Settlement Processing Fee	x+n-8
32	Acquiring Institution Identification Code	n...11; LLVAR
33	Forwarding Institution Identification Code	n...11; LLVAR
34	Primary Account Number, Extended (not currently used)	ns...28; LLVAR
35	Track-2 Data	z...37; LLVAR
36	Track-3 Data (not currently used)	z...104; LLLVAR
37	Retrieval Reference Number	an-12
38	Authorization Identification Response	an-6
39	Response Code	an-2
40	Service Restriction Code (not currently used)	an-3
41	Card Acceptor Terminal Identification	ans-8
42	Card Acceptor Identification Code	ans-15
43	Card Acceptor Name/Location	ans-40

TABLE 4.1
ISO 8583–1987 DATA ELEMENTS
(continued)

Number	Name	Attributes
44	Additional Response Data	ans...25; LLVAR
45	Track-1 Data	ans...76; LLVAR
46	Additional Data (ISO) (not currently used)	ans...999; LLLVAR
47	Additional Data (National) (not currently used)	ans...999; LLLVAR
48	Additional Data (Private/ISO 8583–1987)	ans...999; LLLVAR
49	Currency Code, Transaction	n-3
50	Currency Code, Settlement	n-3
51	Currency Code, Cardholder Billing	n-3
52	Personal Identification Number (PIN) Data	b-64
53	Security Related Control Information (not currently used)	n-16
54	Additional Amounts	an...120; LLLVAR
55	Integrated Circuit Card (ICC) System Related Data	b...255; LLLVAR
56	Reserved (ISO) (not currently used)	ans...999; LLLVAR
57–59	Reserved (National) (not currently used)	ans...999; LLLVAR
60	Advice Reason Code	ans...060; LLLVAR
61	Point of Service (POS) Data	ans...026; LLLVAR
62	Intermediate Network Facility (INF) Data	ans...050; LLLVAR
63	Network Data	ans...012; LLLVAR
64	Message Authentication Code (MAC) (not currently used)	b-64
65	Bit map, Extended (not currently used)	b-64
66	Settlement Code	n-1
67	Extended Payment Code (not currently used)	n-2
68	Receiving Institution Country Code (not currently used)	n-3

ISO 8583–1987 Data Element Definitions

Message Data Elements

Number	Name	Attributes
69	Settlement Institution Country Code (not currently used)	n-3
70	Network Management Information Code	n-3
71	Message Number (not currently used)	n-4
72	Message Number Last (not currently used)	n-4
73	Date, Action (not currently used)	n-6; YYMMDD
74	Credits, Number	n-10
75	Credits, Reversal Number	n-10
76	Debits, Number	n-10
77	Debits, Reversal Number	n-10
78	Transfers, Number	n-10
79	Transfers, Reversal Number	n-10
80	Inquiries, Number	n-10
81	Authorizations, Number	n-10
82	Credits, Processing Fee Amount	n-12
83	Credits, Transaction Fee Amount	n-12
84	Debits, Processing Fee Amount	n-12
85	Debits, Transaction Fee Amount	n-12
86	Credits, Amount	n-16
87	Credits, Reversal Amount	n-16
88	Debits, Amount	n-16
89	Debits, Reversal Amount	n-16
90	Original Data Elements	n-42
91	File Update Code (not currently used)	an-1
92	File Security Code (not currently used)	an-2
93	Response Indicator (not currently used)	an-5
94	Service Indicator (not currently used)	an-7

TABLE 4.1
ISO 8583–1987 DATA ELEMENTS
(continued)

Number	Name	Attributes
95	Replacement Amount	n-42
96	Message Security Code (not currently used)	b-64
97	Amount, Net Settlement	x+n-16
98	Payee (not currently used)	ans-25
99	Settlement Institution Identification Code	n...11; LLVAR
100	Receiving Institution Identification Code	n...11; LLVAR
101	File Name (not currently used)	ans...17; LLVAR
102	Account Identification-1	ans...28; LLVAR
103	Account Identification-2	ans...28; LLVAR
104	Transaction Description (not currently used)	ans...100; LLLVAR
105–111	Reserved for ISO use (not currently used)	ans...999; LLLVAR
112	Parcelas	ans...100; LLVAR
113–119	Reserved for National use (not currently used)	ans...999; LLLVAR
120	Record Data	ans...999; LLLVAR
121	Authorizing Agent Identification Code (not currently used)	ans...011; LLLVAR
122–125	Reserved for future definition and use by MasterCard (not currently used)	ans...999; LLLVAR
126	Reserved (Private/ISO 8583–1987) (not currently used)	ans...999; LLLVAR
127	Private Data	ans...050; LLLVAR
128	Message Authentication Code (not currently used)	b-64

DATA ELEMENT DEFINITIONS

The remainder of this section contains detailed definitions of all the ISO 8583–1987 message data elements, beginning with the Message Type Indicator, the Primary and Secondary Bit maps, and continuing with all ISO 8583–1987 data elements in the order of their ISO-assigned bit map number.

MESSAGE TYPE IDENTIFIER (MTI)

The Message Type Identifier is a four-digit numeric field describing the type of message being interchanged.

Attribute

n-4

Usage

This data element must be present as the first field of each ISO 8583–1987 EFT message.

Values

Valid MTIs for the MDS are listed below.

TABLE 4.2
ISO 8583–1987
MESSAGE TYPES

Code	Description
Financial Transaction/(02xx) Messages	
0200	Financial Transaction Request
0210	Financial Transaction Request Response
0220	Financial Transaction Advice
0230	Financial Transaction Advice Response
0280	Financial Transaction Acknowledgment
0290	Financial Transaction Negative Acknowledgment
Reversal Advice/(04xx) Messages	
0420	Acquirer Reversal Advice
0430	Acquirer Reversal Advice Response
0422	Issuer Reversal Advice
0432	Issuer Reversal Advice Response

TABLE 4.2
ISO 8583–1987
MESSAGE TYPES
(continued)

Code	Description
Reconciliation Advice/(05xx) Messages	
0520	Acquirer Reconciliation Advice
0530	Acquirer Reconciliation Advice Response
0522	Issuer Reconciliation Advice
0532	Issuer Reconciliation Advice Response
Administrative Advice/(06xx) Messages	
0620	Administrative Advice
0630	Administrative Advice Response
0644	Administrative Advice (Banknet connected members only)
Network Management/(01xx) Messages	
0800	Network Management Request
0810	Network Management Request Response
0820	Network Management Advice

☞ **Network Management Advice/0820 messages are generated only by the MDS and do not require a subsequent response message.**

PRIMARY AND SECONDARY BIT MAPS

A bit map is a series of 64 bits used to identify the presence or absence (denoted by "1" or "0") of each data element. The bit map is interpreted from left to right, with the leftmost bit representing DE 1 in the Primary Bit Map and DE 65 in the Secondary Bit Map, and the rightmost bit representing DE 64 in the Primary Bit Map and DE 128 in the Secondary Bit Map.

Attribute

b-64 (for each bit map)

☞ **If both bit maps are present, the total length of the bit map field is 128 bits (16 bytes).**

Usage

The second message field required in every ISO 8583–1987 EFT message consists of one or two bit maps, each consisting of 64 bits. Bits are numbered from the left, starting with "1." The first bit map contains bits numbered from 1 through 64; the second bit map contains bits numbered from 65 through 128.

Each bit signifies the presence ("1") or absence ("0") in the message of the data element (DE) associated with that particular bit; such as the data element having the same index number as the bit map number.

The Bit Map, Primary, must always be present in a message. The most frequently used data elements are indexed from these positions (DE 1 through DE 64); infrequently used data elements are indexed from the Bit Map, Secondary (DE 6 through DE 128).

The Bit Map, Secondary (DE 1), is optional; it is only required when one or more data elements in the range from DE 65 through DE 128 are required to be present in a message. Presence of the Bit Map, Secondary, is indicated by a "1" in DE 1 of the Bit Map, Primary.

Although additional bit maps are accommodated in ISO Standard 8583 through the use of additional bit maps, extended (such as setting the first bit in any bit map to "1" to indicate the presence of a following extended bit map), the ISO 8583–1987 implementation utilizes a *maximum of two bit maps* (Primary and Secondary), with a maximum number of message data elements in the range DE 1 through DE 128. Consequently, DE 65 (the first bit in Bit Map, Secondary) **must always be set to zero**.

Bits corresponding to **mandatory** data elements for a specific message type must be set to "1" to indicate the presence of the data element in the message. Otherwise, the message will be rejected by the MDS via the appropriate response message or via a Administrative Advice (Reject)/0620 message.

DE 1—BIT MAP, SECONDARY

The Bit Map, Secondary (DE 1), is a series of 64 bits used to identify the presence (denoted by "1") or the absence (denoted by "0") of each data element in the second segment of a message (such as data elements in the range Settlement Code [DE 66] through Message Authentication Code [DE 128]).

Attribute

b-64

DE 2—PRIMARY ACCOUNT NUMBER (PAN)

Primary Account Number (PAN) (DE 2) is a series of digits used to identify a customer account or relationship.

Attribute

n...19; LLVAR.

Usage

This data element has two primary uses:

1. It is used to contain Primary Account Numbers (PAN) in Authorization/(01xx), Financial Transaction/(02xx), and Reversal Advice/(04xx) messages.

   This data element is used for all PANs up to 19 digits in length, in Authorization/(01xx), Financial Transaction/(02xx), and Reversal Advice/(04xx) messages.

   PAN data consists of three primary components:

   - issuer identification number (IIN)
   - individual account identification number
   - PAN check digit

   Specific requirements for PAN composition are detailed in ISO specification 7812 and 7813. All PANs used in ISO 8583–1987 EFT messages must conform to the ISO PAN encoding requirements as specified in these documents.

   It may be used to contain a valid processor ID number or a variable-length issuer card prefix in Network Management/(08xx) (Class 0) messages.

The PAN field may contain only an Issuer Identification Number or card prefix sequence identified by a card-issuing institution. It may also contain a valid processor ID for certain 08xx-series messages. Specific usage requirements for each message are provided within the individual Message Format Specification charts.

2. Where card prefix information is required, the MDS will accommodate variable-length prefix sequences from four to eleven digits. Processor IDs used in this data element must be valid values assigned by MasterCard.

☞ **The processor ID is a ten-digit number of the form: "9000000xxx" where "xxx" is the 3-digit MDS–assigned processor ID.**

DE 3—PROCESSING CODE

The Processing Code (DE 3) is a series of digits used to describe the effect of a transaction on the customer account and the type of accounts affected.

Attribute

n-6

Usage

The Processing Code consists of three subfields to indicate:

1. **Transaction Type** to be performed

   Digits one and two of DE 3 are used to describe the EFT transaction being performed.

2. **"from" account type**

   Digits three and four of DE 3 are used to describe the cardholder account type affected for cardholder account debits and inquiries, and the "from" account type for cardholder account transfer transactions.

3. **"to" account type**

   Digits five and six of DE 3 are used to describe the cardholder account type affected for cardholder account credits and the "to" account type for cardholder account transfer transactions.

Values

Processing Codes applicable to the MasterCard Debit Switch (MDS) are listed below.

Tables 4.3a and 4.3b identify the individual values to be used for each of the three subfields of the Processing Code.

Table 4.3c lists all valid combinations of the subfields supported by the MasterCard Debit Switch (MDS) as Processing Codes.

TABLE 4.3A
TRANSACTION TYPE CODES (SUBFIELD 1)

Code	Transaction Type
00	Purchase (Also transaction type for Maestro Cashback)
01	Withdrawal
02	Debit Adjustment (*for future use*)
17	Cash Disbursement
20	Refund/Correction
23	Credit Adjustment
30	Balance Inquiry
40	Account Transfer

TABLE 4.3B
ACCOUNT CODES (SUBFIELDS 2 AND 3)

Code	Account Description
00	No account specified (NAS)/Default Account
10	Savings Account
20	Checking Account
30	Credit Card Account

TABLE 4.3C
MASTERCARD DEBIT SWITCH ALLOWABLE PROCESSING CODE VALUES

Code	Account Description
000000	Purchase; no account specified; Not valid for ATM Gateway transactions, for example, Plus, Visa, AMEX.
001000	Purchase from savings account
002000	Purchase from checking account
010000	Withdrawal; no account specified
011000	Withdrawal from savings account
012000	Withdrawal from checking account

TABLE 4.3C
MASTERCARD DEBIT
SWITCH ALLOWABLE
PROCESSING CODE
VALUES
(continued)

Code	Account Description
013000	Withdrawal from credit card account; Acquirer Processing Systems (APSs) connected to the MDS must generate Financial Transaction/(02xx) messages. However, if the transaction involves a MasterCard credit card forwarded to the Banknet network for approval by MasterCard credit card issuers, the MDS will translate the Financial Transaction/(0200) message to an Authorization Request/(0100) message with a processing code of 173000.
200000	Online refund; no account specified; Codes valid for MasterCard debit card[1] and Maestro transactions only.
201000	Online refund to savings account
202000	Online refund to checking account
230000	Credit adjustment; no account specified; Codes valid for MasterCard debit card and Maestro transactions only. MasterCard debit card adjustments may only be 230000.
231000	Credit adjustment to savings account
232000	Credit adjustment to checking account
300000	Balance inquiry; no account specified; When no account is specified on a balance inquiry transaction, the issuer may return both checking and savings account balances if applicable.
301000	Balance inquiry on savings account
302000	Balance inquiry on checking
303000	Balance inquiry on credit card (credit line)
401020	Transfer from savings account to checking account
402010	Transfer from checking account to savings account
403020	Transfer from credit card account to checking account

☞ **The MasterCard Debit Switch (MDS) supports only the specific Processing Code subfield combinations listed in Table 4.3c.**

---

[1] MasterCard debit cards are often marketed under the MasterMoney™ program by issuers.

DE 4—AMOUNT, TRANSACTION

Amount, Transaction (DE 4) is the amount of funds requested by the cardholder in the local currency of the acquirer or source location of the transaction, exclusive of any transaction fees that may be applied to the transaction.

Attribute

n-12

Usage

Whenever DE 4 is used in a ISO 8583–1987 message, the local currency of the card acceptor (such as the currency used by the cardholder at the point of service) must always be specified using the Currency Code, Transaction (DE 49). This currency is referred to as the currency of the acquirer or the currency of the transaction at the point of service.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

Values

For MasterCard debit card clearings (Financial Transaction Advice/0220 message), this data element will contain the completed amount.

DE 5—AMOUNT, SETTLEMENT

Amount, Settlement (DE 5) is the amount of funds to be transferred between the acquirer and the issuer, exclusive of fees, equal to the Amount, Transaction (DE 4) in the currency of settlement, U.S. dollar.

Attribute

n-12

Usage

The MDS automatically inserts this data element into all originating Financial Transaction/(02xx) messages as a currency conversion service when the currency of transaction differs from the currency of settlement.

This data element will always be present whenever Amount, Transaction, **DE 4 is not equal to 840**, U.S. dollars, except for ISIS transactions, when it will be equal to the currency of settlement.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 6—AMOUNT, CARDHOLDER BILLING

Amount, Cardholder Billing (DE 6) is the amount billed to the cardholder in the currency of the cardholder account exclusive of cardholder billing fees. This is used to indicate the amount of the transaction in the currency of the issuer.

Attribute

n-12

Usage

The MasterCard Debit Switch does not currently use this data element.

DE 7—TRANSMISSION DATE AND TIME

Transmission Date and Time (DE 7) is the date and time that a message is initiated. Upon receipt, the MDS updates this data element with its internal time stamp. Date and time must be expressed in universal time (UT) time units.

Attribute

n-10; MMDDhhmmss

Usage

DE 7 is a transaction time-stamp supplied by the message initiator within all originating messages. This value must remain constant throughout the life of a transaction, including subsequent responses related to original request or advice messages.

Values

Data in this field must comprise a valid date and time.

DE 8—AMOUNT, CARDHOLDER BILLING FEE

Amount, Cardholder Billing Fee (DE 8) is the fee the issuer is to bill to the cardholder in the same currency as Amount, Cardholder Billing (DE 6).

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-8

Usage

The MDS *does not* support real-time settlement of transaction fees or processing fees *concurrently with each individual transaction.* All such fees for each financial network are calculated and settled daily (for example, settled upon completion of each financial network's business day) for all customers.

DE 9—CONVERSION RATE, SETTLEMENT

Conversion Rate, Settlement (DE 9) is the factor used in the conversion from transaction to settlement amount. The Amount, Transaction (DE 4) is multiplied by DE 9 to determine the Amount, Settlement (DE 5).

Attribute

n-8

Format

EBCDIC, right justified with leading zeroes. The left-most digit denotes the number of positions that the decimal separator shall be moved **from the right**. The leftmost digit must be in the range 0 to 7.

Example

A field value of "69972522" is interpreted as a conversion rate of 9.972522.

Usage

The MDS provides automatic currency conversion as a service for customers that participate in international interchange and will supply the conversion rate in this field.

When this field is present in a message, DE 5 and Currency Code, Settlement (DE 50) must also be present.

DE 10—CONVERSION RATE, CARDHOLDER BILLING

Conversion Rate, Cardholder Billing (DE 10) is the factor used in the conversion from transaction to cardholder billing amount. The Amount, Transaction (DE 4) is multiplied by DE 10 to determine Amount, Cardholder Billing (DE 6).

Attribute

n-8

Format

EBCDIC, right justified with leading zeroes. The left-most digit denotes the number of positions that the decimal separator shall be moved **from the right**. The leftmost digit must be in the range zero to seven.

Example

A field value of "69972522" is interpreted as a conversion rate of 9.972522.

DE 11—SYSTEMS TRACE AUDIT NUMBER

Systems Trace Audit Number (DE 11) is a number assigned by a message initiator to uniquely identify a transaction.

Attribute

n-6

Usage

The System Trace Audit Number (STAN) is provided as a facility for message originators to uniquely identify a transaction. It must remain unchanged for all messages associated with a given transaction, which includes all responses and acknowledgments related to an original request or advice message. On a reversal message, the STAN from the original transaction requested is located in DE 90, subfield 2. Each message initiator participating in the MDS must assign a Systems Trace Audit Number to each originating message that is **unique within each message originator's UT day**.

DE 12—TIME, LOCAL TRANSACTION

Time, Local Transaction (DE 12) is the local time at which the transaction takes place at the point of service.

Attribute

n-6; hhmmss.

Usage

DE 12 is the local time that a cardholder transaction takes place, and should be the same value that is printed on the cardholder receipt, if possible. This time must be specified in local time zone units, and **not** in Universal Time (UT) units.

For MasterCard debit card clearings (Financial Transaction Advice/0220 messages), this will contain the MDS time that the store and forward message is sent, **not** the value set in the original pre-authorization.

Values

The value in this field must be a valid.

DE 13—DATE, LOCAL TRANSACTION

Date, Local Transaction (DE 13) is the local month and day on which the transaction takes place at the point of service.

Attribute

n-4; MMDD.

Usage

DE 13 is the local date that a cardholder transaction takes place, and should be the same value that is printed on the cardholder receipt, if possible. This time must be specified in local time zone units, and **not** in universal time (UT) units.

Values

The value in this field must be a valid date.

DE 14—DATE, EXPIRATION

The Date, Expiration (DE 14) specifies the year and month after which a cardholder's bank card is designated to be expired by the issuer.

Attribute

n-4; YYMM.

Usage

Where allowed, this data element may be present in manually-keyed MasterCard debit card or Maestro transactions.

Values

The value in this field must be a valid date.

DE 15—DATE, SETTLEMENT

Date, Settlement (DE 15) is the date (month and day) that funds will be transferred between an acquirer and an issuer by the MDS.

Attribute

n-4; MMDD.

Usage

This data element is present in all Financial Transaction/(02xx) and Reversal/(04xx) messages that convey a settlement value. It contains the calendar date on which funds for a transaction will be settled.

For Settlement Reconciliation/(05xx) messages, DE 15 identifies the Financial Network calendar date for which the reconciliation count and amount totals are applicable.

Values

This data element must contain a valid date.

DE 16—DATE, CONVERSION

The Date, Conversion (DE 16) is the month and day that the conversion rate is effective to convert the transaction amount from the original currency into the currency of settlement.

Attribute

n-4; MMDD.

Usage

DE 16 indicates the effective date (month and day) of the Conversion Rate, Settlement (DE 9) whenever that data element is present within an EFT message.

DE 16 also indicates the effective date (month and day) of the Conversion Rate, must be present whenever the Currency Code, Transaction (DE 49) does not equal 840.

Values

The value in this field must be a valid date.

DE 17—DATE, CAPTURE

Date, Capture (DE 17) is the month and day the acquirer processed the transaction data.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-4; MMDD.

Usage

The MasterCard Debit Switch does not currently use this data element.

Values

The value in this field must be a valid date.

DE 18—MERCHANT TYPE

The Merchant Type (DE 18) code is the classification of the merchant's type of business or service.

Attribute

n-4

Usage

DE 18 code is a 4-digit indicator used to classify a merchant's product or service, selected from a standard list of classification codes referred to as Merchant Category Codes.

Values

For ATM cash disbursements, this data element may only contain a value of 6011.

For Cirrus Purchase transactions (DE 3 = "00xx00"), this data element must contain a value of 6012.

For MasterCard debit card and Maestro transactions, Appendix C, Merchant Category Codes, provides a list of permissible values that must be used in the Merchant Type Code data element.

☞ **The Merchant Type Code of 6012 is not valid for Maestro point of sale transactions.**

DE 19—ACQUIRING INSTITUTION COUNTRY CODE

Acquiring Institution Country Code (DE 19) is the code of the country where the acquirer is located. Refer to the ISO 3166 specification for more information.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

Usage

The MasterCard Debit Switch does not currently use this data element.

DE 20—PRIMARY ACCOUNT NUMBER (PAN) COUNTRY CODE

The PAN Country Code (DE 20) is a code identifying the country where the card issuer is located.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

Usage

DE 20 is required to be included within any message whenever the associated PAN (in Primary Account Number [DE 2] or Primary Account Number Extended [DE 34]) is present and begins with a "59" prefix. PANs beginning with a "59" prefix are **not** guaranteed to be unique without the use of this associated Country Code.

Values

Country codes must be selected from the numeric ISO Standard Country Codes listed in ISO 8583–1987 Appendix 2, ISO Country and Currency Codes.

DE 21—FORWARDING INSTITUTION COUNTRY CODE

Forwarding Institution Country Code (DE 21) is the code of the country where the forwarding institution is located.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

DE 22—POINT OF SERVICE ENTRY MODE

The Point of Service Entry Mode (DE 22) consists of numeric codes to indicate the method by which the PAN was entered into the interchange system and to indicate the PIN entry capabilities of the terminal device.

Attribute

n-3

Values

DE 22 must be determined from the table of values below:

Subfield 1 (2 digits)	POS Terminal PAN Entry Mode
00	PAN entry mode unknown.
01	PAN manual entry.
03	PAN auto-entry via bar code reader.
04	PAN auto-entry via optical character reader (OCR).
05	PAN auto-entry via integrated circuit card.
06	PAN key entry.
79	Chip card or chip-capable terminal was unable to process transaction using data on the chip or magnetic stripe, therefore, PAN was entered via manual entry, *or* Acquirer not certified to process the value "80", so the MDS replaced "80" with "79".
80	Chip card or chip-capable terminal was unable to process transaction using data on the chip, therefore, the PAN was entered via magnetic stripe. The full track data has been read from the data encoded on the card and transmitted within the authorization request on Track-2 Data (DE 35) or Track-1 Data (DE 45) without alteration or truncation.
81	PAN manual entry via electronic commerce.

Subfield 1 (2 digits)	POS Terminal PAN Entry Mode
90	PAN auto-entry via magnetic stripe—the full track data has been read from the data encoded on the card and transmitted within the authorization request on DE 35 or DE 45 without alteration or truncation.

Subfield 2 (1 Digit)	POS Terminal PIN Entry Mode
0	Unspecified or unknown.
1	Terminal has PIN entry capability.
2	Terminal *does not* have PIN entry capability.
8	Terminal has PIN entry capability, but PIN pad is out of service.
9	PIN verified by terminal device.

Edits

If Integrated Circuit Card (ICC) System-Related Data (DE 55) is present in the message, then the first two digits of DE 22 must be 05. Otherwise, the message is rejected with a format error.

DE 23—CARD SEQUENCE NUMBER

The Card Sequence Number (DE 23) is used to distinguish among individual cards having the same Primary Account Number (DE 2) or Primary Account Number, Extended (DE 34).

Attribute

n-3

Usage

The Card Sequence Number must be present in all transactions that involve a chip card with subfield #1 of Point of Service Entry Mode (DE 22) = "05".

DE 24—NETWORK INTERNATIONAL IDENTIFIER

Network International Identifier identifies a single international network of card issuers.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

DE 25—POINT OF SERVICE CONDITION CODE (ISO)

Point of Service Condition Code (ISO) (DE 25) is an identification of the condition under which the transaction takes place at the point of service.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-2

Usage

All programs and services the MasterCard Debit Switch supports use Point of Service (POS) Data (DE 61) as MasterCard defined and implemented for use by all customers, both foreign and domestic, to specify the applicable conditions at the point of service.

DE 26—POINT OF SERVICE (POS) PIN CAPTURE CODE

The POS PIN Capture Code (DE 26) is a code indicating the technique, maximum number of PIN characters, or both, that can be accepted by the point of service device used to construct the Personal Identification Number (PIN) Data.

Attribute

n-2

Usage

The Point of Service PIN Capture Code must be used to indicate the maximum number of PIN characters that the acquiring terminal device (ATM, POS terminal, and so on.) is **capable** of accepting.

☞ **This field is not present in MasterCard debit card.**

☞ **This data element is not used to specify the number of PIN characters actually accepted by a point of service terminal device.**

The MDS requires that this data element be included in 0200 Financial Transaction messages **only** when PIN Data (DE 52) is present **and** the maximum PIN character acceptance capability of the terminal is known to be **other than 12 digits**.

Values

This data element must contain one of values described below:

Value	Description
00–03	Invalid.
04–12	Indicates the maximum number of PIN characters that the terminal can accept.
13–99	Reserved.

DE 27—AUTHORIZATION IDENTIFICATION RESPONSE LENGTH

The Authorization Identification Response Length (DE 27) is the maximum length of the authorization response that can be accommodated by the acquirer. The issuer, or its agent, is expected to limit response to this length.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-1

DE 28—AMOUNT, TRANSACTION FEE

Amount, Transaction Fee (DE 28) is the fee charged (for example, by the acquirer) for transaction activity in the currency of the Amount, Transaction (DE 4).

Attribute

x+n-8

Usage

This data element may be present in a message whenever an online transaction fee is permitted by the operating rules of an EFT financial product.

The credit or debit indicator (such as the first position of the data element) applies to the message recipient. Within acquirer-generated message types, a D (debit) fee amount indicates that the fee is to be applied as a debit to the message recipient, the issuer (and therefore as a credit to the message originator, the acquirer).

Edits

This data element must contain valid numeric data with an appropriate indicator (C or D) in the first character position.

☞ **For acquirers that are approved to levy ATM Access Charges, this data element must contain the access fee amount and this amount must also be added to the requested amount contained in Transaction Amount (DE 4).**

Please note that acquirers must test with the MDS **prior** to implementation of this data element.

DE 29—AMOUNT, SETTLEMENT FEE

Amount, Settlement Fee (DE 29) is the fee to be transferred between the acquirer and the issuer in the currency of Amount, Settlement (DE 5).

Attribute

x+n-8

Usage

The MDS uses this data element to contain the interchange amount and should be set according to the operating rules of the specific product.

The credit or debit indicator as assigned by the MDS as it pertains to the recipient of the message.

Edits

This data element must contain valid numeric data with an appropriate indicator (C or D) in the first character position.

DE 30—AMOUNT, TRANSACTION PROCESSING FEE

Amount, Transaction Processing Fee (DE 30) is the fee charged by the MDS for the handling and routing of messages in the currency of Amount, Transaction (DE 4).

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

x+n-8

Usage

This data element may be present in a message whenever an online processing fee is to be charged by the MDS for transaction processing services. When used, this data element is inserted by the MDS into applicable messages.

The credit or debit indicator (such as the first position of the data element) applies to the message recipient. Within acquirer-generated message types, a D (debit) fee amount indicates that the fee is to be applied as a debit to the message recipient, the issuer (and therefore as a credit to the MDS). For issuer-generated message types, a D (debit) fee amount indicates that the fee is to be applied as a debit to the message recipient, the acquirer (and therefore as a credit to the MDS).

Edits

This data element must contain valid numeric data with an appropriate indicator (C or D) in the first character position.

DE 31—AMOUNT, SETTLEMENT PROCESSING FEE

Amount, Transaction Processing Fee (DE 31) is the fee charged by the MDS for the handling and routing of messages in U.S. dollars.

Attribute

x+n-8

Usage

The MDS uses this data element to contain the amount charged by the MDS for transaction activity, and is always expressed in U.S. dollars.

The credit or debit indicator (such as the first position of the data element) applies to the message recipient.

Edits

This data element must contain valid numeric data with an appropriate indicator (C or D) in the first character position.

DE 32—ACQUIRING INSTITUTION IDENTIFICATION CODE

The Acquiring Institution Identification Code (DE 32) identifies the acquirer (for example, merchant bank) or its agent.

Attribute

n...11, LLVAR.

Usage

DE 32 identifies the institution acting as the acquiring bank or merchant bank for an EFT transaction.

For CPS systems connected to the MDS, this data element must contain either:

- the 9-digit Federal Reserve Routing and Transit (R & T) number of the institution that owns the terminal device, or

- a 9-digit ID pseudo number assigned by MasterCard in accordance with applicable product rules.

For MasterCard debit card, this will contain 7084xxxxC where:

7084 = literal text
xxxx = acquirer ICA
C = "3-7-1" check digit

Edits

This data element must contain numeric data.

☞ **This data element must always contain a length value of "09" followed by nine characters of numeric data in the associated variable-length data field.**

DE 33—FORWARDING INSTITUTION IDENTIFICATION CODE

The Forwarding Institution Identification Code (DE 33) identifies the institution forwarding a Request or Advice message in an interchange system if not the same institution as specified in the Acquiring Institution Identification Code (DE 32).

Attribute

n...11; LLVAR.

Usage

This data element *must* be present in all Authorization/(01xx), Financial Transaction/(02xx), and Reversal/(04xx) messages. Routing of all these messages throughout the MDS is based upon the Acquirer ID Code (DE 32), the DE 33, and PAN information. It is important that all of these data elements are properly encoded to ensure accurate routing for both the original transaction and any subsequent reversals, chargebacks, adjustments, or representments.

Values

When present in a message, this data element must contain the processor ID.

☞ **The processor ID is a ten-digit number of the form:**

"9000000xxx"

where "xxx" is the 3-digit MDS Processor ID assigned by MasterCard.

This data element must always contain a length value of "10" followed by ten characters of numeric data in the associated variable-length data field.

For issuers who elect to receive the implied decimal in this data element, the MDS will place the implied currency exponent of the local transaction of Amount, Transaction (DE 4) in position 7 of this data element.

DE 34—PRIMARY ACCOUNT NUMBER, EXTENDED

The Primary Account Number, Extended (DE 34) is used to identify a customer account or relationship, and is used only when a PAN is longer than 19 digits in length or contains special characters and therefore cannot be placed into Primary Account Number (DE 2).

When the DE 34 data element contains a "59" prefix, the PAN Country Code (DE 20) **must also be included** in the message in order to **uniquely identify the PAN**. Note that "59" PANs are not guaranteed to be unique without an accompanying Country Code.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ns...28; LLVAR.

DE 35—TRACK-2 DATA

Track-2 Data (DE 35) is the information encoded on track 2 of the card magnetic stripe as defined in ISO 7813, **including field separators**, but excluding beginning and ending sentinels and LRC characters as defined therein.

Attribute

z...37; LLVAR.

Usage

Whenever track 2 data is captured automatically at the point of service, this field must contain whatever is encoded on the magnetic stripe (track 2) of the card, regardless of whether or not the card has been properly encoded with information in accordance with ISO specifications.

The following minimum data must be encoded on track 2:

Subelement	Length	Description
Start Sentinel *(not transmitted)*	n-1	binary "1011"
PAN	n…19	
Field Separator	ans-1	binary "1101" (see note)
Expiration Date	n-4	"YYMM" format
Service Code	n-3	
Discretionary Data	n…9	optional by issuer
End Sentinel *(not transmitted)*	n-1	binary "1111"
LRC *(not transmitted)*	n-1	
Total maximum characters encoded:	40	
Total maximum characters transmitted:	37	

For Maestro and MasterCard debit card transactions that are manually keyed, the MDS will build track 2 using the PAN (DE 2) and the Expiration Date (DE 14). If the Expiration Date is not available, the MDS will use 4912 as the default.

Values

This data element must contain an EBCDIC representation of the hexadecimal digits "0" through "9" and "D" or "=", the "equal sign".

☞ **The field separator character (binary "1101") is represented as the EBCDIC character "D". However, since some ATM and POS terminal devices perform non-standard character translation while reading BCD-encoded magnetic stripe data, the EBCDIC character "=" may also be used to represent the field separator character in magnetic stripe data forwarded to the MDS.**

DE 36—TRACK-3 DATA

Track-3 Data (DE 36) is the information encoded on track 3 of the card magnetic stripe as defined in ISO 4909-1986, including field separators but excluding beginning and ending sentinels and LRC characters as defined therein.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

z...104; LLLVAR.

Values

This data element must contain an EBCDIC representation of the hexadecimal digits "0" through "9" and "D." The character "D" represents a field separator character (binary "1101"). Since some ATM and POS terminal devices perform non-standard character translation while reading BCD-encoded magnetic stripe data, the EBCDIC character "=" (such as the EBCDIC code for an equal-sign) may also be used to represent the field separator character in magnetic stripe data forwarded to the MDS.

DE 37—RETRIEVAL REFERENCE NUMBER

The Retrieval Reference Number (DE 37) is a document reference number supplied by the system retaining the original source document of the transaction and is used to assist in locating that source document or a copy thereof.

Attribute

an-12

Usage

This data element is reserved for use by the acquiring institution (or an affiliated merchant organization) for the purpose of recording a document retrieval reference number that can be used to locate original cardholder transaction information in any subsequent chargeback action.

DE 37 must be returned by the issuer in all corresponding response messages and in any subsequent chargeback action. The retrieval reference number should be printed on a customer's ATM or POS receipt.

DE 38—AUTHORIZATION IDENTIFICATION RESPONSE

The Authorization Identification Response (DE 38) is a transaction response identification code assigned by the authorizing institution.

Attribute

an-6

Usage

This data element may be used for authorization tracking information by issuer processing systems. It is not mandatory for use in the MDS; however, MasterCard credit card issuers participating in the program via the Banknet network will provide this data element in approved MasterCard ATM transactions that are forwarded to the APS via the MDS.

Values

Any valid alphanumeric character sequence may be used.

MasterCard debit card clearing 0220 messages will contain all six positions from the original authorization response.

The MDS Stand-In service will set this data element to the literal text "STND" followed by two (2) blank characters.

DE 39—RESPONSE CODE

The Response Code (DE 39) is a code which defines the disposition of a message.

Attribute

an-2

Usage

Response codes indicate the disposition of a previous message or to indicate approval or denial of a transaction. When an authorization is declined, the response code will indicate the reason for rejection and may also indicate an action to be taken by the card acceptor or POS terminal device (for example, capture card).

This data element must be present in all response messages. In addition, it will also be present in Financial Transaction Advice (Stand-In)/0220 messages to indicate DE 39 that was utilized in the Financial Transaction Request Response (Stand-In)/0210 message response to the original Financial Transaction Request/0200 message.

Values

DE 39 must contain a valid numeric or alpha-numeric response code from the list of values provided in Table 4.4.

TABLE 4.4
RESPONSE CODES

Code	APS Action	Definitions
Valid Response Codes for 0210 and 0220 messages		
00	Approve	Approved or completed successfully
04	Capture	Capture Card
12	Decline	Invalid transaction *For MDS use only*
13	Decline	Invalid amount
14	Decline	Invalid PAN
15	Decline	Invalid issuer *For MDS use only*
30	Decline	Message format error *MasterCard debit card issuers can only use this code if the MDS sends a message with an format error*
41	Capture	Lost Card
43	Capture	Stolen Card
51	Decline	Non-sufficient funds
54	Decline	Expired card
55	Decline	Invalid PIN
57	Decline	Transaction not permitted to issuer or cardholder
61	Decline	Exceeds withdrawal limit
62	Decline	Restricted Card
75	Decline	Allowable number of PIN tries exceeded
80	Decline	System not available
91	Decline	Destination processor (CPS or INF) not available
92	Decline	Unable to route transaction
96	Decline	System error
Valid Response Codes for 0280 messages		
00	—	Completed successfully
Valid Response Codes for 0290 messages		
30	—	Format error

TABLE 4.4
RESPONSE CODES
(continued)

Code	APS Action	Definitions
68	—	Response received late *The MDS will forward a response code "68" in the Financial Transaction Negative Acknowledgement/0290 message in reply to a late 0210 message or unsolicited response message.* *The MDS will forward a response code "96" in the Financial Transaction Negative Acknowledgement/0290 message to the issuer of the transaction, when the transaction timer expires before a valid Financial Transaction Request Response/0210 transaction response is received.* *The MDS will forward a response code "96" in the Financial Transaction Negative Acknowledgement/0290 message to the acquirer of a transaction when the acquirer Financial Transaction Acknowledgement/0280 timer expires before a valid Financial Transaction Acknowledgement/0280 message is received.* *The Financial Transaction Acknowledgement/0280 timer is only relevant for those acquirers who support the Financial Transaction Acknowledgement/0280 message.*
80	—	System not available *The response codes from the acquirer's Financial Transaction Advice/0220 and Acquirer reversal Advice/0420 messages are stored temporarily in a queue. When the MDS formulates the Financial Transaction Advice Response/0230 or Acquirer Reversal Advice Response/0430 message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96, the MDS will echo it back to the acquirer*

TABLE 4.4
RESPONSE CODES
(continued)

Code	APS Action	Definitions
96	—	System error or System timer expired on expected CPS Message *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96, the MDS will echo it back to the acquirer*
Valid Response Codes for 0230 messages		
00	—	Approved or completed successfully
30	—	Format error
80	—	System not available *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96, the MDS will echo it back to the acquirer*
96	—	System error or System timer expired on expected CPS Message *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96, the MDS will echo it back to the acquirer*
Valid Response Codes for 0430, 432 messages		
00	—	Approved or completed successfully
30	—	Format error
71	—	Message out of exception cycle sequence

	Code	APS Action	Definitions
TABLE 4.4 **RESPONSE CODES** (continued)	72	—	Exception cycle time expired; such as chargeback more than 45 days after presentment *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96 the MDS will echo it back to the acquirer*
	80	—	System not available *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96 the MDS will echo it back to the acquirer*
	96	—	System error or System timer expired on expected CPS Message *The response codes from the acquirer's 0220 and 0420 messages are stored temporarily in a queue. When the MDS formulates the 0230 or 0430 response message, the MDS returns the response code from the queue in the online message. Therefore, if the acquirer were to send a response code 71, 72, 80, 96, the MDS will echo it back to the acquirer*

Valid Response Codes for 0530, 0532, 0630, 0810 messages

Code	APS Action	Definitions
00	—	Approved or completed successfully
30	—	Format error
80	—	System not available
96	—	System error or System timer expired on expected CPS Message

DE 40—SERVICE RESTRICTION CODE

Service Restriction Code (DE 40) identifies geographic or service availability.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

an-3

DE 41—CARD ACCEPTOR TERMINAL IDENTIFICATION

The Card Acceptor Terminal Identification (DE 41) is a unique code identifying the terminal at the Card Acceptor Location.

Attribute

ans-8

Usage

This data element is used to identify specific terminal devices of acquiring institutions or merchant point of service (POS) systems. Each terminal ID is assigned by the terminal owner. It must be unique within the terminal owning organization.

When this data element is included within an originating Financial Transaction/(02xx) or Reversal/(04xx) message, it must be returned in the corresponding response message.

Values

The MDS does not perform edits on this data element.

DE 42—CARD ACCEPTOR IDENTIFICATION CODE

The Card Acceptor Identification Code (DE 42) identifies the card acceptor, which defines the point of the transaction in both local and interchange environments.

Attribute

ans-15

Usage

DE 42 is used as "merchant ID" to uniquely identify the merchant in a POS transaction. For a Maestro transaction, this data element must contain a merchant name. MasterCard debit card transactions may contain alpha or numeric characters or a combination of both.

☞ **This data element is required in Maestro and MasterCard debit card transactions and will be forwarded to the issuer in Financial Transaction Request (Pre-Authorization)/0200 and Financial Transaction Advice/0220 messages.**

Values

The MDS does not perform edits on this data element.

DE 43—CARD ACCEPTOR NAME AND LOCATION

The Card Acceptor Name and Location (DE 43) field contains the name and location of the card acceptor, which defines the point of service in both local and interchange EFT environments.

Attribute

ans-40

Usage

This data element is used to satisfy national regulatory requirements concerning merchant identification within Financial Transaction/(02xx) messages. It is a required data element within all Financial Transaction/(02xx) request and advice messages.

Formats

The data subfield format specified below must be used within DE 43 for all transactions:

Position	Usage	Length
1–22	ATM owning institution and/or Terminal/Merchant name and address	22 bytes
23	Delimiter (space)	1 byte
24–36	ATM or Merchant location city	13 bytes
37	Delimiter (space)	1 byte
38–40	For U.S.A locations: ATM or Merchant location state code	3 bytes
or		
38–40	For Canada: ATM or Merchant location province code	3 bytes
or		
38–40	For all other countries: ATM or Merchant location country code	3 bytes
	Total:	40

For Mondex™ transactions, such as those transactions with Point of Service Entry Mode (DE 22) = "05x", DE 43 must be formulated from one of the three cases as shown:

Position	Usage	Length
1–3	Literal text "MX:"	3 bytes

1. If transaction originated at a POS or ATM terminal:

Position	Usage	Length
4–22	Bank or Merchant name follows.	19 bytes
23	Delimiter (space)	1 byte
24–36	ATM, or Merchant, location city	13 bytes
37	Delimiter (space)	1 byte
38–40	For U.S.A locations: ATM or Merchant location state code	3 bytes
or		
38–40	For Canada: ATM or Merchant location province code	3 bytes
or		
38–40	For all other countries: ATM or Merchant location country code	3 bytes

2. If the transaction originates at a telephone:

Position	Usage	Length
4–40	Literal text "PHONE" followed by date and time as PHONEmmddyyhhmmss	37 bytes

3. If the transaction originates at a personal computer:

Position	Usage	Length
4–40	Literal the text "PC" followed by date and time as PCmmddyyhhmmss	37 bytes

All State, Province, and Country Codes must be selected from Appendix 1 or Appendix 2 of this publication. If a country code is used, it must be the ISO 3-character alphabetic (not numeric) Country Code. If a State or Province Code is used, it should be right justified in this subfield with one leading blank space.

Delimiter fields must be the **blank** character. This is required because most cardholder statement rendering systems in operation today are not designed to perform printer output editing or formatting of the acquirer-supplied data contained within DE 43. The acquirer must pre-format DE 43 exactly as it is to be printed on the cardholder's statement.

DE 44—ADDITIONAL RESPONSE DATA

The Additional Response Data (DE 44) field is used to provide other supplemental data (for example, a telephone number) that may be required in response to an authorization or other type of transaction request.

Attribute

ans...25; LLVAR.

Usage

This data element may be present in *any* response message when the Response Code (DE 39) is set to "30", indicating that a Format Error condition was detected in the preceding message. The first three bytes of DE 44, if present, will contain a 3-digit numeric value indicating the ISO data element number where the format error was encountered.

☞ **When DE 39 = "30", DE 44 is optional; DE 44 will not always be present to indicate the source location of a format error. When available, it will be provided to processors as an aid to resolve system errors.**

DE 45—TRACK-1 DATA

Track-1 Data (DE 45) is the information encoded on track-1 of a bankcard magnetic stripe as defined in ISO 7813, including field separators but *excluding* beginning and ending sentinels and LRC characters as defined therein.

Attribute

ans...78; LLVAR.

Usage

DE 45 is used in point of service (POS) applications where the POS terminal equipment reads and transmits track-1 data *in lieu of* or *in addition to* the track-2 information encoded on the card magnetic stripe.

When it is received as a part of a financial authorization request, MasterCard debit card *only*, the MDS will build Track-2 Data (DE 35) from this data element to forward to the issuer. When present, DE 45 will also be sent.

The following minimum data must be encoded on DE 45:

Subelement	Length	Description
Start Sentinel *(not transmitted)*	n-1	
Format Code	an-1	Literal character "B"
PAN	n…19	
Field Separator	ans-1	
Cardholder Name	ans…26	
Field Separator	ans-1	
Expiration Date	n-4	"YYMM" format
Service Code	n-3	
Discretionary Data	n…23	optional by issuer

Subelement	Length	Description
End Sentinel *(not transmitted)*	n-1	
LRC *(not transmitted)*	n-1	
Total maximum characters encoded:	81	
Total maximum characters transmitted:	78	

☞ **This data element may only be present in MasterCard debit card transactions.**

DE 46—ADDITIONAL DATA (ISO)

Additional Data (ISO) (DE 46) provides data supplemental to that already conveyed in the specific data elements in the message.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

Usage

ISO reserves this data element for future definition and use.

DE 47—ADDITIONAL DATA (NATIONAL)

Additional Data (National) (DE 47) is reserved for national organizations to define data unique to country applications

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

Usage

This data element is reserved for future definition and use by appropriate national standards organizations.

DE 48—ADDITIONAL DATA

Additional Data (DE 48) is reserved for use on a product basis.

Attribute

ans...100; LLLVAR.

Usage

Subelement 11

For Network Management/0800 messages used in Key Exchange Data Block sequences, the following subfield formatting must be used.

Five subfields must be encoded as follows:

Subfield	Attribute	Value(s)
1. (Prefix)	an-4	"1138" (Constant value for MDS; indicates that this is a key exchange data block)
2. Key Class Identifier	an-2	"PK" (Pin Key Change)
3. Key Index Number	n-2	"00" (Constant value for MDS)
4. Key Cycle Number	n-2	"00" ... "99"
5. Encrypted Key	an-16	Hex characters "0" ... "9" and "A" ... "F"
6. Key Check Value	an-16	Hex characters "0" ... "9" and "A" ... "F"

The Encrypted Key (subfield 5 above) contains the hexadecimal representation of the 64 bits of the new encryption key, encrypted under the current Communications Key.

The Key Check Value (subfield 6 above) contains the hexadecimal representation of the first four check digits (binary zeroes encrypted under the new key).

Subelements 88 and 89

For MasterCard debit card use the following subelements.

Usage	Length	Value(s)
TCC	1	TCC value
Magnetic stripe/CVC error subelement tag	2	"88"
Subelement length	2	"01"
Y indicates that the Authorization System replaced the 90 in DE 22 with 02, meaning that the acquirer submitting the transaction is in monitoring status for CVC processing.	1	"Y"
Magnetic stripe/CVC error subelement tag	2	"89"
Subelement length	2	"01"
The following codes indicate track data, POS data, or TCC errors: A = track 1 or track 2 not present in the message B = track 1 and track 2 present in the message C = PAN (DE 2) not equal in track data D = Expiration Date (DE 14) not equal in track data E = service code invalid in track data F = field separator(s) invalid in track data G = a field within the track data exceeds maximum length H = TCC (in DE 48) is T I = POS customer presence indicator (DE 61, position 4) is 1, 2, 3, 4, or 5 J = POS card presence indicator (DE 61, position 5) is 1	1	(see Usage column)

Subelements 82 and 83

Subelement Contents	Length	Value(s)
TCC	1	TCC value
Transaction identifier subelement tag	2	"82"
Subelement length; value is 02	2	"02"
AVS option code as follows: 51 = AVS only 52 = AVS and Authorization Request/0100	2	(see Usage column)
Transaction identifier subelement tag	2	"83"
Subelement length	1	"01"
AVS result code as follows: X = for U.S. addresses, all digits match, nine-digit ZIP code; for addresses outside the U.S., the postal code matches Y = yes, all digits match, five-digit ZIP code A = address matches, postal/ZIP code does not W = for U.S. addresses, nine-digit ZIP code matches, address does not; for address outside the U.S., the postal code matches, address does not Z = five-digit ZIP code matches, address does not N = nothing matches U = no data from issuer/Authorization System R = retry, system unable to process S = AVS currently not supported	1	(see Usage column)

☞ **The length of this data element has been limited to 100 bytes for practical operational and system constraints.**

DE 49—CURRENCY CODE, TRANSACTION

The Currency Code, Transaction (DE 49) is the local currency of the acquirer or source location of the transaction. It is used to specify the currency used in Amount, Transaction (DE 4).

Attribute

n-3

Usage

This data element is mandatory whenever DE 4 is present in a message.

Values

All currency codes must be selected from the numeric ISO Standard Currency Codes provided in Appendix 2 of this document. Alpha currency codes must not be used.

DE 50—CURRENCY CODE, SETTLEMENT

The Currency Code, Settlement (DE 50) is the code defining the currency of Amount, Settlement (DE 5) and Amount, Settlement Fee (DE 29).

Attribute

n-3

Usage

This data element is mandatory whenever DE 5 is present in a message. For transactions where the MDS performs automatic currency conversion, this data element is automatically inserted into the message by the MDS.

Values

All Currency Codes must be selected from the numeric ISO Standard Currency Codes listed in Appendix 2 of this document. Alpha currency codes must not be used.

DE 51—CURRENCY CODE, CARDHOLDER BILLING

The Currency Code, Cardholder Billing (DE 51) is the code defining the currency of Amount, Cardholder Billing (DE 6) and Amount, Cardholder Billing Fee (DE 8).

Attribute

n-3

Usage

This field is a mandatory data element whenever Conversion Rate Cardholder Billing (DE 10) is present in a message. For transactions where the MDS performs automatic currency conversion, this data element is automatically inserted into the message by the MDS.

DE 52—PERSONAL IDENTIFICATION NUMBER (PIN) DATA

The Personal Identification Number (PIN) Data (DE 52) contains a number assigned to a cardholder intended to uniquely identify that cardholder at the point of interaction (POI).

Attribute

b-64

Usage

This data element is used to transmit a cardholder's PIN, **in encrypted form** for issuer verification or validation. It is mandatory in all Financial Transaction Request/0200 messages.

All PINs must be encrypted using the procedures identified in Section 10, Security Requirements, of this manual.

The MasterCard Debit Switch (MDS) permits PINs from 4 to 12 characters in length. Regardless of the original PIN length, the encrypted PIN block is always 64 bits (8 bytes) in length.

Because of strict security requirements implemented within the EFT Network environment, PINs are never transmitted in the clear as character data; PINs must always be encrypted into a 64-bit Encrypted PIN block. In addition, PIN Data is never included in online 0220 store-and-forward or other EFT messages.

If the MDS performs PIN validation or verification on behalf of an issuer, this data element will be turned off.

☞ **This data element will not be present for MasterCard debit card point of sale transactions.**

DE 53—SECURITY RELATED CONTROL INFORMATION

As of the publication date of this document, the ISO 8583 organization has not determined the specific definition and usage requirements for Security Related Control Information (DE 53).

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-16

DE 54—ADDITIONAL AMOUNTS

Additional Amounts (DE 54) provides information on up to six amounts and related account data for which specific data elements have not been defined.

Attribute

an...120; LLLVAR.

Usage

DE 54 is used to return account balance information in Financial Transaction/(02xx) message balance inquiry transactions or "cash-back" information on a purchase transaction.

Use of DE 54 subfields is optional within other Authorization Response/0110 and Financial Transaction Response/0210 messages. When present, they are used to contain account balance information that the acquirer may print on transaction receipts for the benefit of the cardholder.

The account balance information on the receipt and on the terminal screen is displayed in the currency of the acquirer.

In the Financial Transaction Response/0210 message, the account balance information is provided in the issuer's currency. The MDS performs a currency conversion from the issuer's currency to and then from to the acquirer's currency. This is returned in the Financial Transaction Response/0210 message to the acquirer.

DE 54 is formatted into subfields as illustrated in Table 4.5.

TABLE 4.5
ADDITIONAL AMOUNT
SUBFIELDS

Position	Usage	Length
1–2	Account Type 10 = savings account 20 = checking account 30 = credit card account	2
3–4	Amount Type 01 = Ledger Balance 02 = Available Balance 40 = Cash-back 90 = Available Credit 91 = Credit Limit	2
5–7	Currency Code Valid numeric Currency Code selected from Appendix B.	3
8	Debit or Credit indicator C = credit amount or positive balance D = debit amount or negative balance	1
9–20	Amount—12 digits, right-justified with leading zeroes	12
	Total:	**20 bytes**

☞ **The MasterCard Debit Switch (MDS) only uses two Additional Amount data subfields.**

Acquirers not capable of printing/displaying negative balances should print/display a zero balance value.

DE 55—INTEGRATED CIRCUIT CARD (ICC) SYSTEM-RELATED DATA

Integrated Circuit Card (ICC) System-Related Data (DE 55) contains chip data formatted in accordance with the Europay-MasterCard-Visa (EMV) 1996 chip specifications. EMV uses Basic Encoding Rules (BER). Reference the EMV 1996 chip specifications for further details regarding the coding of BER-TLV (Tag, Length, Value) data objects.

Attribute

b...255; LLLVAR.

Usage

An issuer and the chip use DE 55 to communicate with each other during a Financial Transaction Authorization Request/0200 or a Financial Transaction Authorization Response/0210. The data is encrypted and only the issuer or issuer's agent is able to properly use it.

The functionality that is provided is Online Mutual Authentication (OMA). The chip is able to authenticate itself to the issuer in the Financial Transaction Authorization Request/0200 and the issuer is able to authenticate itself to the chip in the Financial Transaction Authorization Response/0210 message.

Chip data in DE 55 consists of a series of subelements in a variable length ". . . tag + length + value. . . ." format as shown below:

Subfield	Attribute	Description
Subelement Tag	b…2	The length of the "tag" subfield is either one or two bytes, depending on the definition of the tag within the EMV 1996 chip specification.
Subelement Length	b-1	The value of the "length" subfield is always one.
Subelement Value	b…24	Subelement data.

These three subelement components may be repeated as needed until all chip data has been presented.

For 0200 messages inbound to an issuer and 0210 messages outbound to an acquirer, this is **OMA-Card Application Data**.

Edits

DE 55 contains binary data that only the issuer or the issuer agent can process. It is used locally by a card's chip at a chip-capable terminal. It is not intended for MasterCard to edit the contents of this data element.

If DE 55 is present in a Financial Transaction Authorization Request/0200 message, then POS Entry Mode Code (DE 22) must equal "05x". Otherwise, the message is rejected with a format error.

DE 55 is not mandatory in Financial Transaction Authorization Response/0210 messages if it was present the Financial Transaction Authorization Request/0200 message.

If the contents of DE 55 in the Financial Transaction Authorization Request/0200 is the same as the contents of DE 55 in the Financial Transaction Authorization Response/0210 message, then the message is rejected with a format error.

☞ **Issuers must reply with either a different value in DE 55 or suppress DE 55 from the Financial Transaction Authorization Response/0210.**

DE 56—RESERVED FOR ISO USE

Reserved for ISO Use (DE 56) is reserved for future definition and use.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

DE 57–DE 59—RESERVED FOR NATIONAL USE

ISO reserved these data elements for future definition and use.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

DE 60—ADVICE REASON CODE

Advice Reason Code (DE 60) is used to indicate the specific purpose of an advice message.

Attribute

ans...060; LLLVAR.

Usage

DE 60 is mandatory within all advice messages. It is comprised of one, two, or three subfields as illustrated below.

Position	Usage	Length
1–3	Subfield 1: Advice Reason Code This subfield is mandatory for all advice messages and indicates the general purpose of the advice message.	3 bytes
4–7	Subfield 2: Advice Detail Code This subfield usage may be conditionally required; it provides additional, specific information as to the exact nature of the advice message.	4 bytes
8–60	Subfield 3: Advice Detail Text This subfield is optional, and may be used to contain textual information supplementary to the Advice Detail Code.	53 bytes

☞ **The MasterCard Debit Switch (MDS) does not currently utilize Subfield No. 3.**

Advice Reason Codes and Advice Detail Codes used for the MasterCard Debit Switch (MDS) are provided in Table 4.6, on the following pages.

TABLE 4.6

ADVICE REASON CODES

Advice Message Type	Advice Reason Code	Advice Detail Code	Advice Reason Code Description
0220	200	–	Network Stand-In: issuer selected option
	201	–	Network Stand-In: IPS signed out
	202	–	Network Stand-In: IPS timed out
	203	–	Network Stand-In: IPS unavailable
	250	–	Network Advice: Possible Duplicate
	251	0010	APS approved transaction; card returned; partial dispense
	251	1010	APS approved transaction; card retained; partial dispense
	280	–	APS approved transaction; Late Acquirer Financial Acknowledgment/0280
	280	0000	Outbound from MDS APS approved transaction; Late Acquirer Financial Acknowledgment/0280
	290	–	APS approved transaction; Pre-Authorized by issuer
	291	–	APS approved transaction; Network time-out
	293	–	APS approved transaction; APS system error
0420	400	–	Network advice: APS error; unable to deliver response
	401	0080	Network advice: APS error; no APS 0180/0280 Acknowledgment
	402	0090	Network advice: IPS time-out error
	450	0011	Zero Dispense: Card returned; no receipt issued
	450	1011	Zero Dispense: Card retained; no receipt issued
	450	0018	Zero Dispense: Card returned; ATM failure
	450	1018	Zero Dispense: Card retained; ATM failure
	450	0019	Zero Dispense: Card returned; ATM time-out
	450	1019	Zero Dispense; Card retained; ATM time-out
	450	0041	Zero Dispense: Card returned; Cardholder time-out
	450	1040	Zero Dispense: Card retained, Cardholder time-out
	451	0010	Partial Dispense: Card returned
	451	1010	Partial Dispense: Card retained
	453	0040	Financial transaction cancellation: Card returned

ISO 8583–1987 Data Element Definitions

DE 60—Advice Reason Code

TABLE 4.6
ADVICE REASON CODES
(continued)

Advice Message Type	Advice Reason Code	Advice Detail Code	Advice Reason Code Description
0420	453	1041	Financial transaction cancellation: Card retained
	454	–	APS unable to deliver response
	455	0090	APS time-out: Card returned
	455	1090	APS time-out: Card retained
0420	490	–	Network Advice: Switch-generated Chargeback action
	490	–	Network Advice: Switch-generated Adjustment action
	490	–	Network Advice: Switch-generated Representment action
0422	489	–	Network Advice: Switch-generated Chargeback action
	489	–	Network Advice: Switch-generated Adjustment action
	489	–	Network Advice: Switch-generated Representment action
0520	500	–	Automatic reconciliation/totals complete
	501	–	Reconciliation request response/totals complete
	502	–	Reconciliation request response/totals incomplete
0522	500	–	Automatic reconciliation/totals complete
	501	–	Reconciliation request response/totals complete
	502	–	Reconciliation request response/totals incomplete
0620	600	–	Message unreadable/indecipherable/ contains invalid data; (Advice Detail Code field MAY contain bit map number of data element where message scanning was aborted)
	601	–	Retrieval Request
	602	–	Fulfillment Notification
0644	690	4	Message not dispatched from remote MIP
	690	5	Message not dispatched to remote MIP
	690	6	Message not delivered to remote MIP
	690	7	Message not delivered from remote MIP

DE 61—POINT OF SERVICE (POS) DATA

Point of Service (POS) Data (DE 61) is used to indicate the specific conditions present at the point of service at the time that a transaction takes place.

Attribute

ans...026; LLLVAR.

Usage

POS condition codes are contained within the first 11 bytes of DE 61. The first 11 bytes are mandatory for all Financial Transaction Request/0200 messages and Financial Transaction Advice/0220 messages; the last 15 bytes are optional for acquirers in Financial Transaction Request/0200 messages and Financial Transaction Advice/0220 messages.

Values

The values for this DE are described as follows:

Position	Usage	Attribute
1	POS Terminal Attendance Indicator	n-1
	0 = Attended terminal (Valid for MasterCard debit card and Maestro transactions only) 1 = Unattended terminal 2 = No terminal used (voice/audio response unit [ARU] authorization) (Valid for MasterCard debit card transactions only)	
2	POS Terminal Operator Indicator	n-1
	No longer used—zero filled	

ISO 8583–1987 Data Element Definitions

DE 61—Point of Service (POS) Data

Position	Usage	Attribute
3	POS Terminal Location Indicator	n-1
	0 = On premises of card acceptor facility 1 = Off premises of card acceptor facility (remote location) 2 = On premises of cardholder (home PC) (Valid for MasterCard debit card transactions only) 3 = No terminal used (Valid for MasterCard debit card transactions only)	
4	POS Customer Presence Indicator	n-1
	0 = Customer present 1 = Cardholder not present, unspecified (Valid for MasterCard debit card transactions only) 2 = Cardholder not present, mail/facsimile order (Valid for MasterCard debit card transactions only) 3 Cardholder not present, phone/ARU order (Valid for MasterCard debit card transactions only) 4 = Cardholder not present, recurring transaction (Valid for MasterCard debit card transactions only) 5 = Electronic order (home PC, Internet) (Valid for MasterCard debit card transactions only)	
5	POS Card Presence Indicator	n-1
	0 = Card present 1 = Card not present (Valid for MasterCard debit card transactions only)	
6	POS Card Retention Indicator	n-1
	0 = Terminal/operator has no card capture capability 1 = Terminal/operator has card capture capability	

Position	Usage	Attribute
7	POS Transaction Status Indicator	n-1
	0 = Normal request (original presentment) 1 = Merchant authorized (Valid for Maestro POS transactions only) 4 = Pre-authorization request (Valid for MasterCard debit card and Maestro transactions only) 5 = Stand-In 6 = Address verification request; verify shipping address (Valid for MasterCard debit card transactions only) 7 = Cash back (Valid for Maestro POS transactions only) 8 = Downtime submission request (Valid for MasterCard debit card transactions only)	
8	POS Transaction Security Indicator	n-1
	0 = No security concern 1 = Suspected fraud 2 = Identification verified	
9	POS Transaction Routing Indicator	n-1
	0 = Zero fill; field no longer used	
10	Cardholder-Activated Terminal Level Indicator	n-1
	0 = Not a CAT transaction 1 = Authorized Level 1 CAT: Automated dispensing machine with PIN 2 = Authorized Level 2 CAT: Self service terminal (Valid for MasterCard debit card transactions only) 3 = Authorized Level 3 CAT: Limited amount terminal (Valid for MasterCard debit card transactions only) 4 = Authorized Level 4 CAT: In-flight commerce (Valid for MasterCard debit card transactions only) 5 = Scrip device (Valid for Maestro POS transactions only)	

ISO 8583–1987 Data Element Definitions

DE 61—Point of Service (POS) Data

Position	Usage	Attribute
11	POS Card Data Terminal Input Capability Indicator	n-1
	0 = Unknown 1 = No terminal used 2 = Magnetic stripe reader 3 = Bar code (reserved for future use) 4 = Optical character recognition (reserved for future use) 5 = Magnetic stripe reader and EMV specification-compatible integrated circuit card (ICC) reader 6 = Key entry only 7 = Magnetic stripe reader and key entry 8 = Magnetic stripe reader and key entry, and EMV-compatible ICC reader 9 = EMV compatible ICC reader	
12-13	POS Authorization Life Cycle Indicated the number of days pre-authorization will stay in effect (ATM and Maestro POS transactions should use 01)	n-2
14-16	POS Country Code Indicates the country of the terminal location (use valid three digit ISO numeric country code)	n-3
17-26	POS Postal Code Indicates the geographic code of the terminal location (if data is unknown or unavailable, zero fill)	n-10

DE 62—INTERMEDIATE NETWORK FACILITY (INF) DATA

Intermediate Network Facility (INF) Data (DE 62) is provided for use by acquiring network processors (CPS or INF) to contain acquiring network trace information useful for routing chargeback or adjustment transactions back to an original acquiring institution.

Attribute

ans...50; LLLVAR.

Usage

INF data is an optional data element within any originating Financial Transaction Request/0200 or Financial Transaction Advice/0220 message originated by an acquiring CPS or INF. Subsequently, this data element (if present within an original transaction) will be returned without alteration in any chargeback or adjustment related to the original transaction.

This data element is provided to assist acquiring processor facilities that connect directly to the MDS. It allows these processors to maintain sufficient information within an EFT message to facilitate online routing of chargebacks and adjustment messages without maintaining an online database of original transaction routing data.

Values

INF data is a free-format, variable length alphanumeric field that may be used to store unique acquiring processor ID codes, acquiring network linking data, or other information useful to processors in routing online chargeback and adjustment messages. It is not edited or modified by the MDS.

DE 63—NETWORK DATA

Network Data (DE 63) is comprised of subfields which are used to contain the following information:

- **Financial Network Code** identifies the EFT financial product with which a transaction is associated. This subfield contains a 2-character alphanumeric product code.

- **Interchange Indicator** identifies the transaction as domestic (within the U.S.A. and Canada), International (Asia Pacific, Europe, Latin America and the Caribbean and Middle East/Africa), or Intra-country (within a country where an ISIS agreement is in effect). This subfield contains a 1-character numeric interchange indicator.

- **Network Reference Number** created by the MDS as a unique transaction identification number known as **Switch Serial Number**. This subfield contains 9 digits of numeric data.

- **Banknet Reference Number** is a unique identifier assigned to MasterCard debit card authorizations and is present in both 0200 authorization and 0220 clearing messages. This subfield contains 9 alphanumeric characters and will only be present in MasterCard debit card transactions.

- **Acquirer's Reference Number** is a unique identifier assigned by the acquirer of MasterCard debit card transactions. This subfield contains 21 digits of numeric data and will only be present in MasterCard debit card 0220 clearing messages.

Attribute

ans...044; LLLVAR.

Usage

This data element is generated by the MDS for each originating message routed to the MDS. It must be retained by the receiver and used in any response or acknowledgment message associated with the originating request or advice message.

The MDS determines the appropriate Financial Network Code for all transactions routed through the MDS, based upon customer-established product configuration tables, customer parameter tables, and MDS routing priority tables.

☞ **The issuer processor should use the Switch Serial Number contained in this data element to match an online same day Acquirer Reversal Advice/0420 message and a Financial Transaction Acknowledgment/0290 message for issuer Late Response to the original Financial Transaction Request/0220 message.**

Values

1. The **Financial Network Code** is defined as follows:

   MC = MasterCard
   CI = Cirrus
   MS = Maestro
   MD = MasterCard debit card
   MX = Mondex™ chip card
   PL = Plus
   VI = VISA
   AE = American Express

2. The Interchange Indicator is defined as follows:

   0 = U.S. and Canada Regions.
   1 = Asia Pacific, Europe, Latin America and the Caribbean, and Middle East/Africa Regions.
   2 = Intracountry (ISIS).

3. The Network Reference Number is generated by the MDS for each original message routed to the MDS.

Online same day reversals contain the original Switch Serial Number of the 0200 message. MDS generated (such as NICS) exception items will be assigned a unique Switch Serial Number.

The batch record will contain both Switch Serial Numbers (the original Switch Serial Number of the 0200 and the Switch Serial Number of the NICS processed exception item).

The online Reversal/(04xx) message will only contain the new Switch Serial Number.

There are some messages (for example, Network Management/[08xx] messages) where Financial Network Code data is not required; however, the subfield must always be present. In these cases the subfield must be blank-filled.

DE 64—MESSAGE AUTHENTICATION CODE (MAC)

Message Authentication Code (MAC) (DE 64) validates the source and the text of the message between the sender and the receiver.

The last bit position within any bit map shall be reserved for DE 64. If authentication is to be used on a message, the MAC information is indicated by the final bit of the final bit map of that message. The final bit of all preceding bit maps shall contain 0; for example, there shall be only one DE 64 per message and that DE 64 must be the last data element of the message.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

b-64

DE 65—BIT MAP, EXTENDED

Bit map, Extended (DE 65) is a series of 64 bits used to identify the presence (denoted by 1) or the absence (denoted by 0 of each data element in an extended [third] message segment).

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

b-64

Usage

The MasterCard Debit Switch defines only two message segments, the presence or absence of which is indicated by Primary and Secondary bit maps. DE 65 would indicate the presence of a "third" message segment, and must never be present in an MasterCard Debit Switch message. The corresponding bit (number 65) must always be 0 in the Secondary Bit Map.

Refer to "Primary and Secondary Bit Maps" earlier in this section.

DE 66—SETTLEMENT CODE

The Settlement Code (DE 66) is a code indicating the result of a reconciliation request.

Attribute

n-1

Usage

This data element is used in Acquirer Reconciliation Advice Response/0530 and Issuer Reconciliation Advice Response/0532 messages to indicate the disposition of a previous Acquirer Reconciliation Response/0520 or Issuer Reconciliation Response/0522 message.

Values

Allowable values for this data element are:

Code	Description
1	Reconciliation message totals balance.
2	Reconciliation message totals do not balance.
9	Reconciliation message received; no balancing performed.

☞ **The MDS requires only the code "9" to be returned in reconciliation response messages. Processors may return one of the other codes listed above; however, reconciliation is the responsibility of the processor.**

DE 67—EXTENDED PAYMENT CODE

Extended Payment Code (DE 67) indicates the number of months that the cardholder prefers to pay for an item (the item purchased during the course of this transaction) if permitted by the card issuer.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-2

DE 68—RECEIVING INSTITUTION COUNTRY CODE

Receiving Institution Country Code (DE 68) is the code of the country where the receiving institution is located.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

DE 69—SETTLEMENT INSTITUTION COUNTRY CODE

The Settlement Institution Country Code (DE 69) is the code of the country where the settlement institution is located.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-3

DE 70—NETWORK MANAGEMENT INFORMATION CODE

The Network Management Information Code (DE 70) is used to identify network status. Additional Data (DE 48) may be used in conjunction with DE 70 to provide network status or control information.

Attribute

n-3

Usage

This data element indicates the specific classification and purpose of Network Management/(08xx) messages. It must be present in all Network Management/(08xx) messages.

Values

The table below lists all Network Management Information Codes valid on the MDS:

Network Management Codes	Network Management Code Functions
Network Management/(08xx)Class 0 messages	
060	Store-and-Forward (SAF) session request
061	Network sign-on by NCID
062	Network sign-off by NCID
065	Network sign-off, begin Stand-In processing
066	Network sign-on, discontinue Stand-In processing
Network Management/(08xx) Class 1 messages	
161	Encryption key change
Network Management/(08xx) Class 2 messages	
270	Echo Test

Network Management Codes	Network Management Code Functions
Network Management/(08xx) Class 3 messages	
363	End-of-File (EOF) encountered for SAF traffic

☞ **The NCID is a ten-digit number configured as follows: "9000000xxx" where "xxx" is the 3-digit MDS processor ID assigned by MasterCard.**

DE 71—MESSAGE NUMBER

Message Number (DE 71) is a sequential, cyclic number the message initiator assigns to a message, used to monitor the integrity of interchange.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-4

DE 72—MESSAGE NUMBER LAST

Message Number Last (DE 72) is a sequential, cyclic number the message initiator assigns to a message, used to monitor the integrity of interchange.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-4

DE 73—DATE, ACTION

Date, Action (DE 73) specifies the date (year, month, and day) of a future action. In addition, it may be used as a static time such as a birthdate.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-6; YYMMDD.

DE 74—CREDITS, NUMBER

Credits, Number (DE 74) is the sum number of cardholder credit transactions processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all cardholder credit transactions (for example, transfer credits) processed during the specified settlement reporting period.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all cardholder credit transactions processed during the specified settlement reporting period. These transactions include all cardholder account credit transactions performed in interchange by the issuer's cardholders on another (acquiring) institution's terminal network.

Values

This data element must contain valid numeric data.

☞ **This data element is only populated for transfer and refund transactions.**

DE 75—CREDITS, REVERSAL NUMBER

Credits, Reversal Number (DE 75) is the sum number of reversal credit transactions.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer reversal credit transactions processed during the specified settlement reporting period. These transactions include all reversals of cardholder account credit transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When used in 0522 Issuer Reconciliation Advice messages, this data element contains the sum number of all issuer reversal credit transactions processed during the specified settlement reporting period. These transactions include all reversals of cardholder account debit transactions (such as reversals of transactions) performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data element must contain valid numeric data.

DE 76—DEBITS, NUMBER

Debits, Number (DE 76) is the sum number of debit transactions processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer debit transactions processed during the specified settlement reporting period. These transactions include all cardholder account credit transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer debit transactions processed during the specified settlement reporting period. These transactions include all cardholder account debit transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data field must contain valid numeric data.

DE 77—DEBITS, REVERSAL NUMBER

Debits, Reversal Number (DE 77) is the sum number of reversal debit transactions.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer reversal debit transactions processed during the specified settlement reporting period. These include all reversals of cardholder account debit transactions (such as reversals of transactions) performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer reversal debit transactions processed during the specified settlement reporting period. These include all reversals of cardholder account credit transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data field must contain valid numeric data.

DE 78—TRANSFERS, NUMBER

Transfers, Number (DE 78) is the sum number of all transfer transactions processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer transfer transactions processed during the specified settlement reporting period. These include all cardholder account transfer transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer transfer transactions processed during the specified settlement reporting period. These include all cardholder account transfer transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data element will contain numeric zeroes.

DE 79—TRANSFERS, REVERSAL NUMBER

Transfers, Reversal Number (DE 79) is the sum number of all transfer reversal transactions processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer transfer reversal transactions processed during the specified settlement reporting period. These include all reversals of cardholder account transfer transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer transfer reversal transactions processed during the specified settlement reporting period. These include all reversals of cardholder account transfer transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data element will contain numeric zeroes.

DE 80—INQUIRIES, NUMBER

Inquiries, Number (DE 80) is the sum number of inquiry transaction requests processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer inquiry transactions processed during the specified settlement reporting period. These include all cardholder account inquiry transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer inquiry transactions processed during the specified settlement reporting period. These include all cardholder account inquiry transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data field will contain numeric zeroes.

DE 81—AUTHORIZATIONS, NUMBER

Authorizations, Number (DE 81) is the sum number of Authorization Request/0100 and Authorization Advice/0120 messages processed.

Attribute

n-10

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum number of all acquirer authorization transactions processed during the specified settlement reporting period. These include all authorization transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum number of all issuer authorization transactions processed during the specified settlement reporting period. These include all authorization transactions performed in interchange by the issuer's cardholders on another institution's terminal network.

Values

This data field will contain numeric zeroes.

DE 82—CREDITS, PROCESSING FEE AMOUNT

Credits, Processing Fee Amount (DE 82) is the sum of all processing fees due **to** an institution or customer for services associated with the handling and routing of transactions.

Attribute

n-12

Values

This data field will contain numeric zeroes.

DE 83—CREDITS, TRANSACTION FEE AMOUNT

Credits, Transaction Fee Amount (DE 83) is the sum of all transaction fees due **to** an institution or customer for the processing of interchange transactions.

Attribute

n-12

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all transaction fees due **to** the institution or customer for acquirer transaction activity.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all transaction fees due **to** the institution or customer for issuer transaction activity.

Values

This data field will contain numeric zeroes.

DE 84—DEBITS, PROCESSING FEE AMOUNT

Debits, Processing Fee Amount (DE 84) is the sum of all processing fees due **from** an institution or processor for services associated with the handling and routing of transactions.

☞ **This data element will contain all zeroes.**

Attribute

n-12

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all processing fees (also referred to as Switch Fees) due **from** the institution or customer for acquirer processing functions performed on behalf of that institution or customer.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all processing fees due **from** the institution or customer with respect to issuer functions performed on behalf of that institution or customer.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 85—DEBITS, TRANSACTION FEE AMOUNT

Debits, Transaction Fee Amount (DE 85) is the sum of all transaction fees due **from** an institution or customer for the processing of interchange transactions.

☞ **This data element will contain all zeroes.**

Attribute

n-12

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all transaction fees due **from** the institution or customer for acquirer transaction activity.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all transaction fees due **from** the institution or processor for issuer transaction activity.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 86—CREDITS, AMOUNT

Credits, Amount (DE 86) is the sum amount of all cardholder credit transactions processed exclusive of any fees.

Attribute

n-16

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all cardholder credit transactions due **to** the institution or processor. These include all cardholder account credit transactions (such as transfer credits) performed by the processor's cardholders.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all cardholder credit transactions due **to** the institution or processor. These include all cardholder account credit transactions performed in interchange by the issuer's cardholders on another (acquiring) institution's terminal network.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 87—CREDITS, REVERSAL AMOUNT

The Credits, Reversal Amount (DE 87) is the sum amount of reversal credits processed exclusive of any fees.

Attribute

n-16

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all acquirer reversal credit transactions due **to** the institution or customer. These include all reversals of cardholder account credit transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all issuer reversal credit transactions due **to** the institution or customer. These include all reversals of cardholder account debit transactions performed in interchange by the issuer's cardholders on another (acquiring) institution's terminal network.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 88—DEBITS, AMOUNT

Debits, Amount (DE 88) is the sum amount of all debit transactions processed exclusive of any fees.

Attribute

n-16

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all cardholder debit transactions due **from** the institution or processor. These include all cardholder account debit transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When present in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all cardholder debit transactions due **from** the institution or processor. These include all cardholder account debit transactions performed in interchange by the issuer's cardholders on another (acquiring) institution's terminal network.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 89—DEBITS, REVERSAL AMOUNT

Debits, Reversal Amount (DE 89) is the sum amount of reversal debits processed exclusive of any fees.

Attribute

n-16

Usage

When present in Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all acquirer reversal debit transactions due **from** the institution or processor. These include all reversals of cardholder account debit transactions performed in interchange by not-On-Us cardholders on the acquirer's terminal network.

When used in Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all issuer reversal debit transactions due **from** the institution or processor. These include all reversals of cardholder account credit transactions performed in interchange by the issuer's cardholders on another (acquiring) institution's terminal network.

Values

This data field must contain valid numeric data.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

DE 90—ORIGINAL DATA ELEMENTS

Original Data Elements (DE 90) are data elements contained in an original message, intended to identify a transaction for correction or reversal.

Attribute

n-42

Format

This data element is comprised of 5 fixed-length subfields. Each subfield is encoded as EBCDIC alphanumeric, right-justified with leading zeroes, as described below.

Subfield	Description	Attribute
1	Original MTI, Message Type Identifier	(n-4)
2	Original DE 11, System Trace Audit Number	(n-6)
3	Original DE 7, Transmission Date and Time	(n-10)
4	Original DE 32, Acquiring Institution ID Code	(n-11)
5	Original DE 33, Forwarding Institution ID Code	(n-11)

Usage

DE 90 **must** be present in the following messages as a reference to an original transaction that is being impacted by a new message or transaction:

- Acquirer Reversal Advices/0420
- Issuer Reversal Advices/0422
- Financial Transaction Advices/0220

☞   **For transactions processed by the MDS, please refer to data element (DE 63) subfield 3—Switch Serial Number as the key data element to match online same day Acquirer and Issuer Reversal Advices.**

Please note that this data element is not present in the Financial Transaction Negative Acknowledgment/0290 messages.

DE 91—FILE UPDATE CODE

The File Update Code (DE 91) indicates the system maintaining a file which procedure to follow.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

an-1

Usage

This data element is used in File Update/(03xx) messages to indicate a specific file update action that is to be executed. Typical file update actions include adding, deleting, or modifying individual file records or parameter data tables maintained by the MDS.

Values

Valid File Update Codes included the following:

Value	Interpretation
1	Add record
2	Change record
3	Delete record
4	Bulk Replacement
5	Inquiry
7	Add File
8	Delete file

DE 92—FILE SECURITY CODE

File Security Code (DE 92) is a file update security code used to indicate that a message originator is authorized to update a file.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n-2

DE 93—RESPONSE INDICATOR

Response Indicator (DE 93) indicates the update action a POS system takes.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

an-5

DE 94—SERVICE INDICATOR

Service Indicator (DE 94) is an indication of the type of support service required by the recipient of a File Update Code (DE 91) message. It is used for coordination of DE 91 messages.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

an-7

DE 95—REPLACEMENT AMOUNTS

Replacement Amounts (DE 95) are the new actual amount data elements necessary to perform a partial or full reversal of a financial transaction or a partial completion amount.

Attribute

n-42

Format

This data element is comprised of 4 fixed-length subfields. Each subfield is encoded as EBCDIC alphanumeric, right-justified with leading zeroes, as described below.

Subfield	Description	Attribute
1	Actual Amount, Transaction	(n-12)
2	Actual Amount, Settlement (provided by the MDS)	(n-12)
3	zero fill	(n-12)
4	zero fill	(n-6)

Usage

DE 95 must be used in the following messages when the original transaction amounts are being modified:

- Financial Transaction Advice/0220 (Acquirer-generated only) except MasterCard debit card

- Acquirer Reversal Advice/0420 message

- Issuer Reversal Advice/0422 message

This data element may not be present in MasterCard debit card transaction clearing.

Values

Subfield No. 1 must contain valid numeric data. All other subfields must be zero-filled by message initiator. Currency conversion of actual Amount, Transaction (DE 4) into actual Amount, Settlement (DE 5) will be performed by the MDS, when required.

DE 96—MESSAGE SECURITY CODE

Message Security Code (DE 96) is used to contained information related to the secure (encrypted) transmission of EFT data.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

b-8

Usage

This data element is used in 0800 Network Management messages to transmit MDS encryption key data.

DE 97—AMOUNT NET SETTLEMENT

Amount, Net Settlement (DE 97) is the net value of all gross settlement amounts, including fees.

Attribute

X+n-16

Usage

In Acquirer Reconciliation Advice/0520 messages, this data element contains the sum amount of all acquirer credit and debit amounts contained within the Acquirer Reconciliation Advice/0520 message. The Amount, Net Settlement (DE 97) indicates the institution's or processor's net settlement position as an **acquirer**. A credit value in this data field indicates monies are due *to* the institution; a debit value in this field indicates that monies are due **from** the institution.

In Issuer Reconciliation Advice/0522 messages, this data element contains the sum amount of all issuer credit and debit amounts contained within the Issuer Reconciliation Advice/0522 message. DE 97 indicates the institution's or processor's net settlement position as an issuer. A credit value in this data field indicates monies are due **to** the institution; a debit value in this field indicates that monies are due **from** the institution.

If an institution or processor participates as both an acquirer and as an issuer within a financial network, the DE 97 from both the Acquirer Reconciliation Advice/0520 and the Issuer Reconciliation Advice/0522 must be added together to obtain the **total** net settlement position. If the sum of these data elements results in a credit value, the institution has a net credit position with respect to the applicable financial product. If the sum of these data elements results in a debit value, the institution has a net debit position.

Where a minor unit of currency applies, amounts will be expressed without a decimal separator. If the currency supports exponents (minor unit of currency), values will be expressed with an implied decimal. For example, 150 would represent $1.50 in U.S. currency.

If the currency does not support exponents (minor unit of currency), the value shown will reflect the actual value. For example, 10000 would represent 10000 Italian Lira.

Values

This data field must contain valid numeric data.

DE 98—PAYEE

Payee (DE 98) is the third party beneficiary in a payment transaction.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans-25

DE 99—SETTLEMENT INSTITUTION IDENTIFICATION CODE

The Settlement Institution Identification Code (DE 99) is a code identifying a settlement institution or its agent.

Attribute

n...11; LLVAR.

Usage

This data element identifies the settlement agent associated with an acquirer, issuer, intermediate network facility, or other entity that participates on the MDS. The settlement institution or agent is responsible for the actual transfer of funds resulting from reconciliation and settlement processing.

Values

This data element will contain the Routing and Transit number assigned to the bank selected by MDS to act as the settlement agent for all processors connected to the MDS.

DE 100—RECEIVING INSTITUTION IDENTIFICATION CODE

The Receiving Institution Identification Code (DE 100) is used by the MDS to determine the destination routing of Administrative/(06xx) messages. For these messages, the Forwarding Institution ID (DE 33) identifies the sender of the message; the receiver of the message is identified by the Receiving Institution ID (DE 100). In a Acquirer Reconciliation Advice/0520 message, this field contains the APS Processor ID. In a Issuer Reconciliation Advice/0522 message, this field contains the IPS Processor ID.

Attribute

n...11; LLVAR.

Usage

This data element must contain a valid Processor ID number assigned by the MDS.

Values

This data element must contain a valid Processor ID.

☞ **Processing systems must not exchange the contents of the Forwarding and Receiving Institution ID Code data elements in response messages; the contents must remain the same for accurate response message routing.**

DE 101—FILE NAME

File Name (DE 101) is the actual or abbreviated name of a file being referenced in a File Update Code (91) message. It is primarily used to identify the from account in a transaction.

☞   **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...17; LLVAR.

Usage

This data element is used on File Update/(03xx) messages to identify the specific name of a Network data file, product parameter table, or Stand-In processing database that is being updated via a File Update Request.

DE 102—ACCOUNT IDENTIFICATION-1

Account Identification-1 (DE 102) is a series of digits used to identify a customer account or relationship. It is primarily used to identify the **from account** in a transaction.

Attribute

ans...28; LLVAR.

Usage

DE 102 may be used in an Authorization Response/0110 or a Financial Transaction Response/0210 messages to identify the specific cardholder from account number affected by a transaction. DE 102 may be used for printing on cardholder transaction receipts.

The from account is the account specified by digits three and four of the Processing Code (DE 3).

Values

The MDS restricts the values of this data element to be numeric only.

DE 103—ACCOUNT IDENTIFICATION-2

Account Identification-2 (DE 103) is a series of digits used to identify a customer account or relationship. It is primarily used to identify the **to account** in a transaction.

Attribute

ans...28; LLVAR.

Usage

DE 103 may be used in an Authorization Response/0110 or a Financial Transaction Response/0210 messages to identify the specific cardholder to account number affected by a transaction. DE 103 may be used for printing on cardholder transaction receipts. The to account is the account specified by digits five and six of the Processing Code (DE 3).

Values

The MDS restricts the values of this data element to be numeric only.

DE 104—TRANSACTION DESCRIPTION

Transaction Description (DE 104) describes additional characteristics of the transaction for billing purposes.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...100; LLLVAR.

DE 105–DE 111—RESERVED FOR ISO USE

ISO reserved these data elements for future definition and use.

☞ **These data elements are not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLVAR.

DE 112—ADDITIONAL DATA (NATIONAL USE)

Additional Data (National Use) (DE 112) is reserved for national organizations to define data unique to specific networks or specific programs and services.

Attribute

ans...100; LLVAR.

Usage

This data element is used to support the "Parcelas" product. "Parcelas" provides acquirers and issuers with the ability to support a recurring payment option at the point of sale.

☞ **"Parcelas" support is presently limited to Maestro® ISIS transactions in Brazil.**

Two Parcelas options supported.

- **Payments without interest.** Under this option the length of repayment installments range from 2 to 12 months. Requests are submitted by the Merchant monthly via the acquirer in INET settlement. The issuer decreases the cardholder's available to buy amount, based upon the authorization request, for the length of the repayment installments.

- **Payments with interest.** Under this option the length of repayment installments range from 2 to 12 months. The transaction is billed monthly to the cardholder. The authorization returned to the acquirer includes the amount of interest over the total installment value and taxes on interest.

Values

DE 112 is organized into a group of encoded subelements, each of which is identified with a three-byte ID and an associated three-byte length indicator.

The first three bytes of each subelement must contain an ID in the range 000–999 to specify the type of DE 112 subelement. Individual requirements define the use and content of the DE 112 subelement.

The second three bytes of each subelement must contain a length indicator in the range 000–999.

The overall length of the DE 112 is specified in its first three bytes (the "LLL" length field of LLVAR). The overall length of DE 112 is restricted to 103 bytes in the CIS message to accommodate practical operational limitations.

The following diagram gives the construction of the entire DE 112 as well as subelements that may exist in it.

Subelement Contents
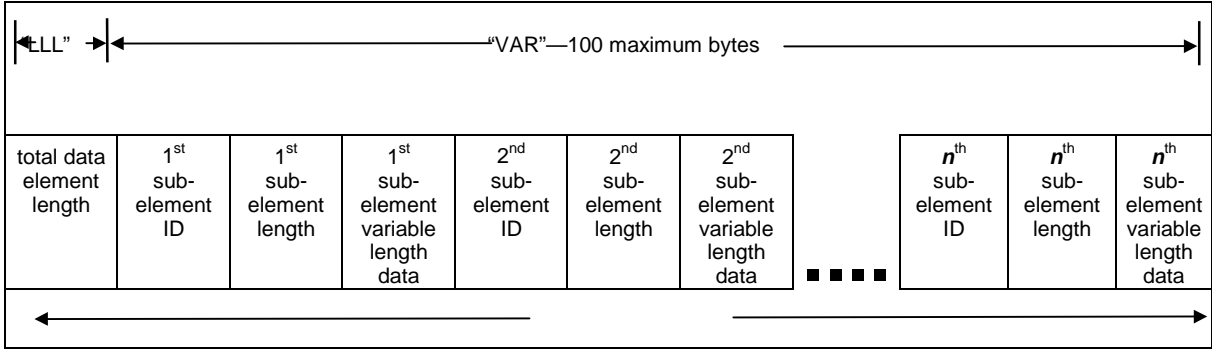
For Parcelas Transactions, DE 112 may contain up to 2 subelements.

Financial Transaction Requests/0200 messages use only subelement #1.

Financial Transaction Request Responses/0210 messages use both subelements #1 and #2.

Subelement #1 for an Financial Transaction Request/0200 message and Financial Transaction Request Response/0210 message:

Usage	Position	Attribute	Description
Subfield tag	1–3	n-3	"001" 1st subfield
Subfield length	4–6	n-3	"004" Length of the subfield
Subfield data	7–8	an-2	Transaction type: "12" Parcelas transaction
	9–10	n-2	Number of installments

Subelement #2 for an Financial Transaction Request Response/0210 message:

Usage	Position	Attribute	Description
Subfield tag	1–3	n-3	"002" 2nd subfield
Subfield length	4–6	n-3	"032" Length of the subfield
Subfield data	7–8	an-2	Issuer type: "12" = Parcelas issuer
	9–10	n-2	Number of installments
	11–22	n-12	Installment Interest
	23–34	n-12	Purchase plus interest amount
	35–38	n-4	Annual interest rate

DE 113–DE 119—RESERVED FOR NATIONAL USE

These data elements have been reserved for definition and use by national standards organizations.

☞ **These data elements are not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLVAR.

DE 120—RECORD DATA

Record Data (DE 120) is a free-format variable-length data field that is used for transmitting file record data or textual character string data in various message types.

Attribute

ans...999; LLLVAR.

Usage

When used in File Update/(03xx) messages, it contains the new data to be used in add or change file update/modification actions. In File Update Response/0310 messages, this data element contains record retrieval data for file inquiry or delete requests.

When used in Administrative Advice/0620 messages having an Advice Reason Code set to "600" (Invalid message; rejected by Network), this data element contains the original (rejected) message.

DE 121—AUTHORIZING AGENT IDENTIFICATION CODE

This data element is used to identify the actual processing facility that approved or denied a Transaction Request message.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

n...011; LLLVAR.

Usage

When a Stand-In or alternate authorizer processing facility performs an authorization or a financial transaction on behalf of a card issuer, it must insert this data element into the response message and into the any advice message transmitted to the actual card issuer. This procedure ensures that a transaction audit trail clearly identifies the authorizing agent that actually approved the transaction.

DE 122—ADDITIONAL RECORD DATA

ISO reserved this data element for private definition and use.

By provision of the ISO 8583–1987 specification, MasterCard redefined this data element for use as "Additional Record Data".

Additional Record Data (DE 122) is a "free-format" variable length data element used for transmitting file record data in various message types.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

DE 123–DE 125—RESERVED FOR FUTURE USE AND DEFINITION BY MASTERCARD

These data elements are reserved for future definition and use by private organizations.

☞ **These data elements are not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...999; LLLVAR.

DE 126—PRIVATE DATA

ISO reserved this data element for private definition and use.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

ans...100; LLLVAR.

Usage

By provision of the ISO 8583–1987 specification, MasterCard defined this data element for use as "Private Data" available for MasterCard's optional use for additional acquirer data.

DE 127—PRIVATE DATA

This data element is reserved for the proprietary use of Customer Processing Systems (CPS) that connect directly to the MDS.

Attribute

ans...50; LLLVAR.

Usage

Any message originator (for example, any CPS or INF facility communicating directly with the MDS) may use this data element to contain private-use data up to a maximum length of 50 characters. Data placed in this field is not passed through to the message receiver, but is stored temporarily by the MDS and returned to the message originator in any subsequent response or acknowledgment message.

Typically, this data element is used by CPS or INF processors to contain online transaction matching or queuing data that can be accessed readily upon receipt of the corresponding response to any originating request or advice message.

Values

The MDS does not perform edits on this data field.

DE 128—MESSAGE AUTHENTICATION CODE (MAC)

Message Authentication Code (MAC) validates the source and the text of the message between the sender and the receiver.

The last bit position within any bit map shall be reserved for DE 128. If authentication is to be used on a message, the MAC information is indicated by the final bit of the final bit map of that message. The final bit of all preceding bit maps shall contain 0; for example, there shall be only one DE 128 per message and that DE 128 must be the last data element of the message.

☞ **This data element is not used by the MasterCard Debit Switch (MDS).**

Attribute

b-64