Elavon ISO Protocol (EISOP)

Version 2.1

Contents

Elavon Financial Services DAC

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Introduction

This document defines an ISO 8583 based message protocol for use by customers/partners of Elavon Merchant Services for the transmission of financial transaction messages.

The method of reconciliation used for a given implementation will be decided based on discussions between Elavon and the partner that proposes to integrate with the Elavon acquiring host system.

One method of operation is for integrators to operate in dual message mode where approved authorisations are stored on the partner's POS terminals or acquiring host system once the transaction is approved. The partner will then create and transmit a submission file to Elavon to effect merchant funding and cardholder debiting. In this document, such a method of operation will be referred to as a dual message solution.

An alternative method of operation is for the Elavon acquiring host to capture and store approved authorisations for subsequent customer funding and cardholder debiting. This will require the partner host system to accumulate batch totals per terminal and send on-line reconciliation requests to the Elavon host. In this document, such a method of operation will be referred to as a single message solution.

Supported Transactions

The Elavon ISO Protocol supports the following authorisation related transactions:

- Sales
- Refunds
- Sale reversals
- 'Force posts' following referral and voice authorisation
- Dynamic Currency Conversion (DCC) quote rejections (legacy system support only)
- Pre-authorisation requests
- Incremental Pre-authorisation
- Pre-authorisation completion requests
- Pre-authorisation reversal
- Incremental Pre-authorisation reversal
- DCC Inquiry Requests

The protocol also supports

- Exchange rate downloads (for DCC)
- Reconciliation request messages
- Network management messages

The following ISO message types are used:

Transaction Description	Request MTI	Response MTI
Pre-authorisations / Incremental Pre-Authorisations	1100	1110
Sales	1200	1210
Pre-Authorisation Completions	1200	1210
Refunds / Force / DCC Quote Rejections (including repeats)	1220/1	1230
Sale Reversals (including repeats)	1420/1	1430
Exchange Rate Requests	1304	1314
DCC Inquiry Requests	1305	1315
Reconciliation / Batch Closure	1500	1510
Network Management	1804	1814

Please note: repeat message processing is only supported for 1220 and 1420 message types.

A maximum number of three repeat messages for a corresponding advice (1x20) message will be accepted by the Elavon acquiring host.

Please note: chip data is not required for Visa Incremental transactions.

Data Encoding and Representation

This section describes the attributes of Elavon ISO 8583 message fields.

Attribute	Description
N x	x numeric digits, BCD encoded, right justified with leading half bytes zero filled
b x	x bits in a bit-field (8 bits per byte; all combinations hex00 to hex FF are allowed)
an x	x alphabetic and numeric characters
ans x	x alphabetic, numeric and special characters
a x	x alphabetic characters
x+N 16	Prefix "C" (credit) or "D" (debit) followed by N 16 field
LL, (LLL)	2 (or 3) digit length, BCD encoded, of variable length field following
VAR y..x	variable length field of type y - maximum size x

Numeric Data

Numeric data (type N x or VAR N) is represented as packed BCD - that is two BCD digits ('0', '1' '9') are stored in each byte. The first digit is stored in the upper nibble and the second digit in the lower nibble.

If the length of the data is odd, it is padded by adding a nibble 0 (zero) to the left of the number. This hex '0' for padding ensures that a whole number of bytes are used for the field and is not included in the length of the item.

Alphanumeric Data

Attribute	Description
a	('a', . . . 'z', 'A' . . . 'Z')
an	('a', . . . 'z', 'A' . . . 'Z', '0' . . . '9')
ans	(hex 20 to hex 7F)

Alphanumeric fields should be left justified with trailing spaces.

LLVAR Variable Length Data

All LLVAR variables irrespective of their type are preceded by two bytes which contain the length of the data represented as two bytes of BCD data (right-justified with leading 0 as necessary). The most significant digit appears first in the message. The length indicates the number of bytes of the data element.

Bitmap Fields

Data elements are counted from left to right - that is, from most to least significant, with the leftmost bit position representing field number 1. The bitmap field will always contain either 8 or 16 bytes, with bytes 9 to 16 present only if the most significant bit of byte 1 is set.

Important Message Fields

Particular attention is drawn to the following message fields:

Field 29 - Reconciliation Number

Dual message implementations should set this field to ‘001’.

In a single message configuration, this number corresponds to the internal terminal batch number held and controlled by Elavon. It is incremented with every successful reconciliation/batch closure message received and ranges from 001 to 999. Closure of batch number 999 will restart batch numbering from 001.

The Reconciliation Number is mandatory for all message types with the exception of:

- 1304 (Exchange Rate Update Request)
- 1305 (DCC Inquiry Request)
- 1804 (Network Management Message)

If the incoming Reconciliation Number is not that expected by Elavon, the transaction will be rejected with response code 137 (Invalid Batch Number). The correct number expected by Elavon will be returned in field 29 of the relevant response message.

Field 32 - Acquiring Institution ID Code

The Acquiring Institution ID Code will be provided to the partner by Elavon. This field must be consistently populated with the assigned value in all applicable messages. This ensures customer identification and whether transaction capture occurs on the Elavon acquiring host system. Please request this value from Elavon if it has not already been provided.

Field 38 - Approval Code

In addition to reflecting the authorisation code for an approved transaction, this data element will be populated when the Elavon acquiring host rejects the incoming message due to a format error or incorrect field contents. Field 38 of the ISO response will contain the ISO field number of the field in error. This will be right justified with leading zeros.

Field 41 - Terminal ID Code

There is an implicit relationship between Field 42 (Merchant ID Code) and Field 41 (Terminal ID Code) in Elavon’s ISO 8583 protocol.

If a Merchant ID code is 123456789 then related terminal IDs will be 12345678901, 12345678902, 12345678903 etc.

The eight digit Terminal ID in field 41 should be sent as 00000001, 00000002, 00000003 etc.

The TID will be generated and provided by Elavon to the customer.

In the event that alphanumeric TIDs are being provided, such values need to be populated in Field 63 Subfield 20. Field 41 should still be provided but it can be populated with zeroes. When Field 63 Subfield 05 is present and populated with ‘Y’, the implicit relationship described above between field 41 and field 42 does not exist. The terminal ID in Field 41 or Field 63 Subfield 20 will be used in messages switched out to the card schemes, and echoed in Elavon’s response. As it is not assigned by Elavon, it will not be subject to further validation.

Field 48 - Additional Private Data

This field is described in full in the Field Descriptions section, but attention is drawn to the following key sub-fields.

Tag 01 – Item Number

In a dual message configuration, this tag must always be present in authorisation related messages, but set to the value 001.

In a single message configuration, the following applies.

Elavon assigns an item number to each approved transaction ‘captured’. These are sales, pre-authorisation completions, ‘force posts’, and refunds.

The item number will increase in value by 1 from 000 to 999 with each approved transaction in a given batch. Once it reaches the maximum value of 999, the batch must be settled resulting in the batch number increasing by 1 and the item number reverting to 000.

The Elavon host will return the item number in Subfield 001 in Field 48 of the appropriate 1110, 1210, 1230 or 1430 response message.

Submitting terminals should supply this value in Field 48 of the next transaction in order to confirm that it received the previous response.

Should the incoming item number be one less than expected, the Elavon host will compare the transaction type, card account number, and transaction amount with that of the previously captured item.

If these are the same, the most recent transaction is considered a duplicate and the previously issued approval code will be retrieved and sent back to the terminal.

If the comparison finds that the key details are not the same, then the previously captured item will be automatically reversed by the Elavon host, as it will be assumed that the terminal did not receive the previous response.

Any other unexpected incoming item number will result in the transaction being declined by Elavon with the response code 131 – Invalid Sequence Number.

Item number ‘000’ should be used by a terminal until the first transaction (eligible for capture) in a new batch is approved, or in authorisation only scenarios.

Tag 05 – Void Item Number

This Subfield is only required in reversal requests for single message implementations where the Elavon acquiring host captures transactions for settlement.

It is important to emphasise that provided the item number exists in the current batch, it will be reversed by the Elavon host regardless of the contents of other subfields and fields.

Details of reversal processing are given in the Reversal Message Format section.

Authorisation Message Format

1100 / 1110 Messages – Pre-Authorisations

The 1100 / 1110 message pair is used for pre-authorisation purposes i.e. seeking approval for the delivery of goods or services where the final amount is not known at the time of the transaction. This is typically the case in hotel, ecommerce and unattended environments (for example petrol stations). The approval is mandatory to get access to the required goods or service;

Or to validate in advance the payment means (credit card) - including the available funds that will be used by the customer at the time of purchase/sale.

Pre-authorisations and authorisations do not result in the cardholder being debited immediately. The cardholder will be debited when this transaction is cleared to the card schemes.

The transaction card details can be provided by a terminal's magnetic stripe reader, ICC reader or manually via the keyboard.

For a magnetic stripe or ICC read the Track 2 Data (Field 35) is used for authorisation, whereas for a manual entry the Primary Account Number (Field 2) and the Date of Expiration (Field 14) are used.

1100 Pre-Authorisation Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1100
	Primary bitmap	Mandatory	
2	PAN	Conditional	Primary Account Number. Required for keyed transactions where Field 35 is not available.
3	Processing code	Mandatory	See Field 3 description for valid values.
4	Transaction amount	Mandatory	The amount will be in the currency specified in Field 49.
6	Cardholder Billing Amount	Conditional	Must be included if DCC has been performed on the device. The amount will be in the currency specified in Field 51.
10	Conversion Rate	Conditional	Mandatory if Field 6 is present.
11	STAN	Mandatory	Unique reference number from the transaction initiator.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
14	Expiration Date	Conditional	The date upon which the card expires. Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
22	Point of Service Data	Mandatory	See Field 22 description for details.
28	Reconciliation Date	Mandatory	See Field 28 description for details.
29	Reconciliation Number	Mandatory	See Field 29 description for details.
32	Acquiring Institution ID	Mandatory	Provided by Elavon.

1100 Pre-Authorisation Request			
Field	**Field Name**	**Required**	**Comments**
35	Track 2 Data	Conditional	This field shall be supplied if a magnetic stripe card is swiped through the POS reader or an ICC card is read through an ICC device reader. If this field is present Fields 2 and 14 should not be provided
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
38	Approval Code	Conditional	Mandatory for completions and incremental pre-authorisations where approval code from (initial) pre-authorisation is populated.
41	Terminal Identification	Mandatory	Card Acceptor Terminal ID. The 8 digit terminal ID will be assigned and provided by Elavon.
42	Merchant ID	Mandatory	A unique ID for the establishment requesting the authorisation.
43	Card Acceptor Name/Address	Optional	Name/Address of establishment requesting the transaction.
48	Additional Private Data	Mandatory	Please refer to Field description and Appendix B.
49	Transaction Currency Code	Mandatory	ISO 4217 numeric currency code of the amount in Field 4.
51	Cardholder Billing Currency Code	Conditional	Required if Field 6 is present. ISO 4217 numeric currency code of the cardholder billing amount specified in Field 6.
52	PIN Data	Conditional	Encrypted PIN.
53	Security Related Information	Conditional	This field is mandatory when PIN data is present, except where DUKPT information is supplied in Field 63, Tag 01.
54	Amount, Other	Conditional	Must be included if there is a cash component of the overall transaction amount in Field 4. The amount will be in the currency specified in Field 49.
55	Integrated Circuit Card Data	Conditional	Must be supplied when the ICC has been used to process the transaction.
60	Reserved Private Data	Mandatory	If a partner supports DCC, Tag 01 (bytes 3 – 4) determine the number of supported currencies. Elavon will advise the partner of the appropriate values in Tag 01.
63	Reserved Private Data III	Conditional	Tag 01 is mandatory if PIN Data is present and the DUKPT scheme is being used.
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1110 Pre-Authorisation Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1110 for Pre-authorisation / Update / Completion & Authorisation response.
	Primary bitmap	Mandatory	
2	PAN	Conditional	Echo if present in corresponding 1100.
3	Processing code	Mandatory	Echo value in corresponding 1100.
4	Transaction amount	Mandatory	Echo value in corresponding 1100 or partially approved amount.
6	Cardholder Billing amount	Conditional	Echo if present in corresponding 1100.
10	Conversion Rate	Conditional	Echo if present in corresponding 1100.
11	STAN	Mandatory	Echo value in corresponding 1100.
12	Transaction Local Date and Time	Mandatory	Echo value in corresponding 1100.
28	Reconciliation Date	Mandatory	Echo value in corresponding 1100.
29	Reconciliation Number	Mandatory	Echo value in corresponding 1100.
32	Acquiring Institution ID	Mandatory	Echo value in corresponding 1100.
37	Retrieval Reference No.	Mandatory	Echo value in corresponding 1100.
38	Approval Code	Conditional	Returned for approved and format error responses. See Field 38 description for more details
39	Response Code	Mandatory	Response from the authorisation.
41	Terminal Identification	Mandatory	Echo value in corresponding 1100.
42	Merchant ID	Mandatory	Echo value in corresponding 1100.
43	Card Acceptor Name / Address	Conditional	Echo value if present in corresponding 1100.
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	Echo value in corresponding 1100.
51	Cardholder Billing Currency Code	Conditional	Echo if present in corresponding 1100.
54	Amount, Other	Conditional	Original amount requested in a partial approval.
55	Integrated Circuit Card Data	Conditional	Returned for an ICC Transaction. Full details in Field 55 Description section.
63	Reserved Private Data III	Conditional	Only those tags relevant to response messages will be returned.
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1200 / 1210 Messages – Sale / Completions

The 1200 / 1210 message pair is used for sale and pre-authorisation completion transaction types.

1200 Sale or Completion Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1200
	Primary bitmap	Mandatory	
2	PAN	Conditional	Primary Account Number. Required for keyed sales where Field 35 is not available. Mandatory for completions.
3	Processing code	Mandatory	See Field 3 description for valid values.
4	Transaction amount	Mandatory	The amount will be in the currency specified in Field 49.
6	Cardholder Billing Amount	Conditional	Must be included if DCC has been performed on the device. The amount will be in the currency specified in Field 51.
10	Conversion Rate	Conditional	Mandatory if Field 6 is present.
11	STAN	Mandatory	Unique reference number from the transaction initiator.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
14	Expiration Date	Conditional	The date upon which the card expires. Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
22	Point of Service Data	Mandatory	See Field 22 description for details.
28	Reconciliation Date	Mandatory	See Field 28 description for details.
29	Reconciliation Number	Mandatory	See Field 29 description for details.
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
35	Track 2 Data	Conditional	This field shall be supplied if a magnetic stripe card is swiped through the POS reader or an ICC card is read through an ICC device reader. If this field is present, Fields 2 and 14 should not be provided
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
38	Approval Code	Conditional	Mandatory for completions where approval code from the initial pre-authorisation is populated.
41	Terminal Identification	Mandatory	Card Acceptor Terminal ID. The 8 digit terminal ID will be assigned and provided by Elavon.
42	Merchant ID	Mandatory	A unique ID for the establishment requesting the authorisation.
43	Card Acceptor Name/Address	Optional	Name/Address of establishment requesting the transaction

1200 Sale or Completion Request			
Field	**Field Name**	**Required**	**Comments**
48	Additional Private Data	Mandatory	Please refer to Field description and Appendix B.
49	Transaction Currency Code	Mandatory	ISO 4217 numeric currency code of the amount in Field 4.
51	Cardholder Billing Currency Code	Conditional	Required if Field 6 is present. ISO 4217 numeric currency code of the cardholder billing amount specified in Field 6
52	PIN Data	Conditional	Encrypted PIN.
53	Security Related Information	Conditional	This field is mandatory when PIN data is present, except where DUKPT information is supplied in Field 63, Tag 01.
54	Amount, Other	Conditional	Must be included if there is a cash component of the overall transaction amount in Field 4. The amount will be in the currency specified in Field 49.
55	Integrated Circuit Card Data	Conditional	Must be supplied when the ICC has been used to process the transaction.
60	Reserved Private Data	Mandatory	If a partner supports DCC, Tag 01 (bytes 3 – 4) determine the number of supported currencies. Elavon will advise the partner of the appropriate values in Tag 01.
63	Reserved Private Data III	Conditional	Tag 01 is mandatory if PIN Data is present and the DUKPT scheme is being used.
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1210 Sale or Completion Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1210 for Pre-authorisation / Update / Completion and Authorisation response.
	Primary bitmap	Mandatory	
2	PAN	Conditional	Echo if present in corresponding 1100/1200.
3	Processing code	Mandatory	Echo value in corresponding 1100/1200.
4	Transaction amount	Mandatory	Echo value in corresponding 1100/1200 or partially approved amount.
6	Cardholder Billing amount	Conditional	Echo if present in corresponding 1100/1200.
10	Conversion Rate	Conditional	Echo if present in corresponding 1100/1200.
11	STAN	Mandatory	Echo value in corresponding 1100/1200.
12	Transaction Local Date and Time	Mandatory	Echo value in corresponding 1100/1200.
28	Reconciliation Date	Mandatory	Echo value in corresponding 1100/1200.
29	Reconciliation Number	Mandatory	Echo value in corresponding 1100/1200.
32	Acquiring Institution ID	Mandatory	Echo value in corresponding 1100/1200.
37	Retrieval Reference Number	Mandatory	Echo value in corresponding 1100/1200.
38	Approval Code	Conditional	Returned for approved and format error responses. See Field 38 description for more details.
39	Response Code	Mandatory	Response from the authorisation.
41	Terminal Identification	Mandatory	Echo value in corresponding 1100/1200.
42	Merchant ID	Mandatory	Echo value in corresponding 1100/1200.
43	Card Acceptor Name / Address	Conditional	Echo value if present in corresponding 1100/1200.
44	Additional Response Data	Conditional	Include the original pre-authorisation approval code in a pre-authorisation completion response where an issuer communication was required.
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	Echo value in corresponding 1100/1200.
51	Cardholder Billing Currency Code	Conditional	Echo if present in corresponding 1100/1200.
54	Amount, Other	Conditional	Original amount requested in a partial approval.
55	Integrated Circuit Card Data	Conditional	Returned for an ICC Transaction. Full details in Field 55 Description section.
63	Reserved Private Data III	Conditional	Only those tags relevant to response messages will be returned.
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1220 / 1230 Messages – Refunds / Force

A 1220 is sent in the following cases:

1) Transaction referred and voice authorisation issued resulting in an offline force transaction.
2) Refund and repeat messages.

If a 1230 is not sent in response to a 1220, a 1221 can be sent for a maximum of 3 attempts.

NOTE: The DCC quote rejection is a legacy transaction and should only be supported if agreed with a partner's nominated Elavon implementation contact.

1220 Refund / Force / DCC Quote Rejection Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1220 (or 1221 for repeat message).
	Primary Bitmap	Mandatory	
2	PAN	Conditional	Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
3	Processing Code	Mandatory	See Field 3 description for valid values.
4	Transaction Amount	Mandatory	The amount of the currency specified in Field 49.
6	Cardholder Billing Amount	Conditional	Included if DCC has been performed on the device. The amount of the currency specified in Field 51.
10	Conversion Rate	Conditional	Mandatory if Field 6 is present.
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at the device.
14	Expiration Date	Conditional	Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
22	Point of Service Data	Mandatory	See Field 22 description for details.
24	Function Code	Mandatory	Values of 200 to 203.
25	Reason Code	Mandatory	
28	Reconciliation Date	Mandatory	
29	Reconciliation Number	Mandatory	
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
35	Track 2 Data	Conditional	This field shall be supplied if a magnetic stripe card is swiped through the POS reader or an ICC card is read through an ICC device reader. If this field is present, Fields 2 and 14 should not be provided.
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
38	Approval Code	Conditional	This field is required in an offline force transaction.
41	Terminal	Mandatory	Card Acceptor Terminal ID.

1220 Refund / Force / DCC Quote Rejection Request			
Field	**Field Name**	**Required**	**Comments**
	Identification		
42	Merchant ID	Mandatory	A unique ID of establishment requesting the transaction.
43	Card Acceptor Name / Address	Optional	Name/Address of establishment requesting the transaction.
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	ISO numeric currency code of the amount in Field 4.
51	Cardholder Billing Currency Code	Conditional	Required if Field 6 is present. ISO numeric currency code of the transaction amount specified in Field 6.
55	Integrated Circuit Card Data	Conditional	Must be supplied when the ICC has been used to process the transaction.
60	Reserved Private Data	Mandatory	If a partner supports DCC, Tag 01 (bytes 3 – 4) determine the number of supported currencies. Elavon will advise the partner of the appropriate values in Tag 01.
63	Reserved Private Data III	Conditional	
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1230 Refund / Force / DCC Quote Rejection Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1230
	Primary Bitmap	Mandatory	
2	PAN	Mandatory	Echo value in 1220/1221.
3	Processing Code	Mandatory	Echo value in 1220/1221.
4	Transaction Amount	Mandatory	The amount will be in the currency specified in Field 49.
6	Cardholder Billing Amount	Conditional	Echo value if present in corresponding 1220/1221.
10	Conversion Rate	Conditional	Echo value if present in corresponding 1220/1221.
11	STAN	Mandatory	Echo value in 1220/1221.
12	Transaction Local Date & Time	Mandatory	Echo value in 1220/1221.
28	Reconciliation Date	Mandatory	Echo value in 1220/1221.
29	Reconciliation Number	Mandatory	Echo value in 1220/1221.
32	Acquiring Institution ID	Mandatory	Echo value in 1220/1221.
37	Retrieval Reference Number	Mandatory	Echo value in 1220/1221.
38	Approval Code	Conditional	Echo value if present in corresponding 1220/1221.
39	Response Code	Mandatory	
41	Terminal Identification	Mandatory	Echo value in 1220/1221.
42	Merchant ID	Mandatory	Echo value in 1220/1221.
43	Card Acceptor Name / Address	Conditional	Echo value if present in corresponding 1220/1221.
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	Echo value in 1220/1221.
51	Cardholder Billing Currency Code	Conditional	Echo value if present in corresponding 1220/1221.
55	Integrated Circuit Card Data	Conditional	Always returned for an ICC Transaction. Full details in Field 55 description.
63	Reserved Private Data III	Conditional	Only those tags relevant to response messages will be returned.
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

Reversal Message Format

1420 / 1430 Messages - Reversals

This message pair is used to cancel a previously authorised transaction.

Elavon will respond positively to the requesting terminal, providing there are no obvious errors with the request, before sending a reversal message to the card scheme.

Field 48 (Additional Private Data) Tags 002 (Elavon STAN), 003 (Elavon Date and Time) and 004 (Elavon RRN) are required for a successful reversal of the authorisation by the scheme where available. These are the Elavon STAN, Elavon Date and Time, and Elavon RRN of the original authorisation request which are returned to the terminal or partner host system in the appropriate authorisation response. They are used by the card schemes to match with the original authorisation, and it is the responsibility of the terminal or partner host system to ensure these are faithfully returned in a reversal request. If unavailable (i.e. in the event of a Timeout) these fields are not required.

Please note: in the case of Pre-Authorisation Reversals; Tags 002, 003 and 004 are not available in the original Pre-Authorisation Response. To successfully reverse a Pre-Authorisation the only mandated field is Field 38 (Approval Code).

If Host Capture has been agreed, Tag 005 of Field 48 must contain the item number of the transaction to be reversed. It is the terminal or partner host systems responsibility to ensure that this item number is correct. If it exists in the current batch it will be voided (and therefore not processed for funding) regardless of the other contents of the reversal request.

Furthermore, the appropriate scheme reference data returned in Field 63 of the approved authorisation response should be populated in Field 63 of the corresponding 1420 reversal.

If a 1430 is not sent in response to a 1420, a 1421 can be sent for a maximum of 3 attempts.

1420 / 1421 Reversal Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1420 (or 1421 for repeat message).
	Primary Bitmap	Mandatory	
2	PAN	Conditional	Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
3	Processing Code	Mandatory	See Field 3 description for valid values.
4	Transaction Amount	Mandatory	Amount should be related to the equivalent to 1100/1200/1220.
6	Cardholder Billing Amount	Conditional	Must be included if DCC has been performed on the device. The amount will be in the currency specified in Field 51. Same value as original 1100/1220.
10	Conversion Rate	Conditional	Required if Field 6 is present. Same value as original 1100/1220.
11	STAN	Mandatory	This is not the STAN of the original 1100/1220.
12	Transaction Local Date and Time	Mandatory	Date and time at the terminal.
14	Expiration Date	Conditional	Present only if Field 35 (Track 2) is not provided. Keyed transactions only. If supplied, should be the same value as in 1100/1220.
24	Function Code	Mandatory	Value of 400 (repeat messages from 401 to 403).
25	Reason Code	Mandatory	
28	Reconciliation Date	Mandatory	
29	Reconciliation Number	Mandatory	
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
35	Track 2 Data	Conditional	This field shall be supplied if a magnetic stripe card is swiped through the POS reader or an ICC card is read through an ICC device reader. If this filed is present, Fields 2 and 14 should not be populated.
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
38	Approval Code	Mandatory	Approval Code from the original 1110/1230 response message.
41	Terminal Identification	Mandatory	Card Acceptor Terminal ID.
42	Merchant ID	Mandatory	A unique ID of establishment requesting the transaction.
43	Card acceptor Name / Address	Optional	Name/Address of establishment requesting the transaction.

1420 / 1421 Reversal Request			
Field	**Field Name**	**Required**	**Comments**
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	ISO numeric currency code of the amount in Field 4. Same value as in corresponding 1100/1220.
51	Cardholder Billing Currency Code	Conditional	Required if Field 6 is present. ISO numeric currency code of the transaction amount specified in Field 6.
55	Integrated Circuit Card Data	Conditional	Must be supplied when the ICC has been used to process the transaction.
60	Reserved Private Data	Mandatory	If a partner supports DCC, Tag 01 (bytes 3 – 4) determine the number of supported currencies. Elavon will advise the partner of the appropriate values in Tag 01.
63	Reserved Private Data III	Conditional	
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

1430 Reversal Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1430
	Primary Bitmap	Mandatory	
2	PAN	Conditional	Present only if Field 35 (Track 2) is not provided. Keyed transactions only.
3	Processing Code	Mandatory	Echo value in 1420/1421.
4	Transaction Amount	Mandatory	Echo value in 1420/1421.
6	Cardholder Billing Amount	Conditional	Echo value if present in corresponding 1420/1421.
10	Conversion Rate	Conditional	Echo value if present in corresponding 1420/1421.
11	STAN	Mandatory	Echo value in 1420/1421.
12	Transaction Local Date and Time	Mandatory	Echo value in 1420/1421.
14	Expiration Date	Conditional	Echo value if present in corresponding 1420/1421.
24	Function Code	Mandatory	Echo value in 1420/1421.
25	Reason Code	Mandatory	Echo value in 1420/1421.
28	Reconciliation Date	Mandatory	Echo value in 1420/1421.
29	Reconciliation Number	Mandatory	Echo value in 1420/1421.
32	Acquiring Institution ID	Mandatory	Echo value in 1420/1421.
37	Retrieval Reference Number	Mandatory	Echo value in 1420/1421.
39	Response Code	Mandatory	
41	Terminal Identification	Mandatory	Echo value in 1420/1421.
42	Merchant ID	Mandatory	Echo value in 1420/1421.
43	Card Acceptor Name / Address	Optional	Echo value if present in corresponding 1420/1421.
48	Additional Private Data	Mandatory	
49	Transaction Currency Code	Mandatory	Echo value in 1420/1421.
51	Cardholder Billing Currency Code	Conditional	Echo value if present in corresponding 1420/1421.
55	Integrated Circuit Card Data	Conditional	Must be supplied when the ICC has been used to process the transaction.
63	Reserved Private Data III	Conditional	Returned where the solution supports Alphanumeric Terminal ID (Tag 20).
64	MAC	Conditional	Value calculated as described in Appendix B if MAC processing is supported.

Conversion Rate Message Format

1304 / 1314 Messages – DCC Rate Requests

This message pair is used to update the exchange rates held on a partner's host system or terminal estate. A "1304" message will be sent from the partner host system or terminal to request exchange rates. A "1314" will be sent in response.

1304 Exchange Rate Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1304
	Primary Bitmap	Mandatory	
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
41	Terminal Identification	Mandatory	Card Acceptor Terminal ID.
42	Merchant ID	Mandatory	A unique ID of establishment requesting the transaction.
60	Reserved Private Data	Conditional	If a partner supports DCC, Tag 01 (bytes 3 – 4) determine the number of supported currencies. Elavon will advise the partner of the appropriate values in Tag 01.
63	Reserved Private Data III	Conditional	

1314 Exchange Rate Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1314
	Primary Bitmap	Mandatory	
11	STAN	Mandatory	Echo value in 1304.
12	Transaction Local Date and Time	Mandatory	Echo value in 1304.
32	Acquiring Institution ID	Mandatory	Echo value in 1304.
37	Retrieval Reference Number	Mandatory	Echo value in 1304.
38	Approval Code	Conditional	May contain ISO field number causing rejection.
39	Response Code	Mandatory	
41	Terminal Identification	Mandatory	Echo value in 1304.
42	Merchant ID	Mandatory	Echo value in 1304.
48	Additional Private Data	Mandatory	Tags 17 and 18 contain exchange rate information as outlined in the Reconciliation Message Format section.

1305 / 1315 Messages – DCC Inquiry Request

Transaction allows a terminal to check eligibility and request Dynamic Currency Conversion (DCC) rates for an individual transaction.

1305 message will be sent from the terminal to request DCC information. 1315 message will be sent in response.

1305 Exchange Rate Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1305
	Primary Bitmap	Mandatory	
2	PAN	Mandatory	Primary Account Number. Used to determine DCC eligibility.
4	Transaction Amount	Mandatory	Transaction amount in base currency specified in Field 49 (Transaction Currency Code).
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
22	POS Data Code	Mandatory	Point of Service Data (See Field Description).
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
41	Card Acceptor Terminal Identification	Mandatory	Terminal ID.
42	Card Acceptor Merchant ID	Mandatory	Merchant ID.
49	Transaction Currency Code	Mandatory	ISO 4217 numeric currency code of the amount in Field 4 (Transaction Amount).
60	Reserved Private Data	Mandatory	Application ID.

1315 Exchange Rate Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1315
	Primary Bitmap	Mandatory	
6	Cardholder Billing Amount	Mandatory	Transaction amount in the currency specified in Field 51 (Cardholder Billing Currency Code).
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
32	Acquiring Institution ID	Mandatory	Provided by Elavon
37	Retrieval Reference Number	Mandatory	Unique partner transaction reference.
39	Response Code	Mandatory	
48	Additional Private Data	Mandatory	Tag 17 (Forex Generic Info) / Tag 18 (Forex Data).
51	Cardholder Billing Currency Code	Mandatory	ISO 4217 numeric currency code of the amount in Field 6 (Cardholder Billing Amount).
63	Reserved Private Data III	Mandatory	Tag 27 (Host DCC Reference Number).

Reconciliation Message Format

1500 / 1510 Messages – Reconciliations

The 1500 / 1510 ISO message pair should not be used for dual message implementations of this protocol.

In a single message implementation, a 1500 reconciliation request message must be sent for each terminal in order to submit the captured transactions for settlement. The Elavon acquiring host system will respond with a 1510 reply.

Note that upon receipt of a 1500 reconciliation request message, the Elavon acquiring host will compare the totals it contains against those held by the host. If there is a mismatch, the Elavon acquiring host will return the totals it holds in the response. A response code (Field 39) of 501 (Reconciliation out of Balance) will be set, but the batch will be processed for funding and a new batch opened.

If a 1500 message is received where Elavon holds no items in a terminal batch, a response code (Field 39) of 133 (No Transactions) will be returned and the existing batch will remain open.

Please note: Multi-Currency Conversion (MCC) is not supported for Host Based solutions.

1500 Reconciliation Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1500
	Primary Bitmap	Mandatory	
1	Secondary Bitmap	Mandatory	
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
24	Function Code	Mandatory	Value 500.
28	Reconciliation Date	Mandatory	
29	Reconciliation Number	Mandatory	
32	Acquiring Institution ID	Mandatory	Provided by Elavon.
41	Terminal Identification	Mandatory	Card Acceptor Terminal ID.
42	Merchant ID	Mandatory	A unique ID of establishment requesting the transaction.
50	Reconciliation Currency Code	Mandatory	
63	Reserved Private Data III	Conditional	
74	Number of Refunds	Mandatory	
75	Number of Cancelled Sales	Mandatory	
76	Number of Sales	Mandatory	
77	Number of Cancelled Refunds	Mandatory	
86	Refunds Amount	Mandatory	
87	Cancelled Sales Amount	Mandatory	
88	Sales Amount	Mandatory	
89	Cancelled Refunds Amount	Mandatory	
97	Reconciliation Net Amount	Mandatory	

1510 Reconciliation Response			
Field	Field Name	Required	Comments
	Message Type ID	Mandatory	1510
	Primary Bitmap	Mandatory	
1	Secondary Bitmap	Mandatory	
11	STAN	Mandatory	Echo value in field 1500.
12	Transaction Local Date and Time	Mandatory	Echo value in field 1500.
24	Function Code	Mandatory	Echo value in field 1500.
28	Reconciliation Date	Mandatory	Echo value in field 1500.
29	Reconciliation Number	Mandatory	Echo value in field 1500.
32	Acquiring Institution ID	Mandatory	Echo value in field 1500.
38	Approval Code	Conditional	May contain ISO field number causing rejection.
39	Response Code	Mandatory	
50	Reconciliation Currency Code	Mandatory	Echo value in field 1500.
74	Number of Refunds	Mandatory	Echo value in field 1500.
75	Number of Cancelled Sales	Mandatory	Echo value in field 1500.
76	Number of Sales	Mandatory	Echo value in field 1500.
77	Number of Cancelled Refunds	Mandatory	Echo value in field 1500.
86	Refunds Amount	Mandatory	Echo value in field 1500.
87	Cancelled Sales Amount	Mandatory	Echo value in field 1500.
88	Sales Amount	Mandatory	Echo value in field 1500.
89	Cancelled Refunds Amount	Mandatory	Echo value in field 1500.
97	Reconciliation Net Amount	Mandatory	Echo value in field 1500.

Network Management Message Format

1804 / 1814 Messages – Network Echo Requests

The following session handling procedures are designed for simple, reliable operation, and to provide minimum required diagnostic information. The only functional consideration is the successful establishment of communications between the Elavon authorisation system and the other participant's system via TCP/IP. Once this has been achieved, the link is deemed active and transactional data can be exchanged. There is no requirement for application-level 'sign-on' or 'sign-off' Network Management messages.

1804 Network Management Echo requests will be generated by the partner host system at a rate of one every five minutes. This is to verify the link integrity for diagnostic purposes only and will not affect the link status. These echo messages must not be sent at a frequency of more than one message every five minutes. Such messaging is optional if transactional data successfully traverses the H2H link since the previous 1804 / 1814 message exchange.

Starting from an idle state, the procedures for establishing and maintaining an authorisation session between the Elavon acquiring host system and a partner host system are as described below:

1. Establish communications. This will be initiated by the partner host system. Appendix A will detail how this is achieved.
2. When the Link is active, authorisation messages can be exchanged.
3. If no traffic is exchanged for a configurable period of time, the partner host system will generate and send an 1804 Echo Request. The Elavon acquiring host system should reply with an 1814 Response.
4. The link will be considered active while the data communications link remains connected. If this disconnects at any time, the participant system should continue periodic attempts to re-establish it (see Appendix A) as in 1 above.

1804 Network Management Echo Request			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1804
	Primary Bitmap	Mandatory	
3	Processing Code	Mandatory	See Field 3 description for valid values.
11	STAN	Mandatory	System Trace Audit Number.
12	Transaction Local Date and Time	Mandatory	Date and time at terminal.
24	Function Code	Mandatory	Value 831.
32	Acquiring Institution ID	Optional	Provided by Elavon.
41	Terminal Identification	Optional	Card Acceptor Terminal ID.
42	Merchant ID	Optional	A unique ID of establishment requesting the transaction.

1814 Network Management Echo Response			
Field	**Field Name**	**Required**	**Comments**
	Message Type ID	Mandatory	1814
	Primary Bitmap	Mandatory	
3	Processing Code	Mandatory	Echo value in 1804.
11	STAN	Mandatory	Echo value in 1804.
12	Transaction Local Date and Time	Mandatory	Echo value in 1804.

Summary of Field Usage

Bit	Field	Attribute	Condition	1100	1110	1200	1210	122x	1230	1304	1305	1314	1315	142x	1430	1500	1510	1804	1814
	Message Type	N 4		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
	Primary Bitmap	b 64		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
1	Secondary Bitmap	b 64		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
2	Primary Account Number	LLVARN..19	Mandatory if Track 2 n/a.	C	C	C	C	C	C	-	M	-	-	C	C	-	-	-	-
3	Processing Code	N 6		M	M	M	M	M	M	-	-	-	-	M	M	-	-	M	M
4	Transaction Amount	N 12		M	M	M	M	M	M	-	M	-	-	M	M	-	-	-	-
6	Cardholder Billing Amount	N 12	Mandatory if DCC used.	C	C	C	C	C	C	-	-	-	M	C	C	-	-	-	-
10	Conversion Rate	N 10	Mandatory if DCC used.	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-
11	Systems Trace Audit Number	N 6		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
12	Transaction Date and Time	N 12		M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
14	Card Expiry Date	N 4	Mandatory if Track 2 n/a.	C	-	C	-	C	-	-	-	-	-	C	C	-	-	-	-
22	POS Data Code	an 12		M	-	M	-	M	-	-	M	-	-	-	-	-	-	-	-
24	Function Code	N 3		-	-	-	-	M	-	-	-	-	-	M	M	M	M	M	-
25	Reason Code	N 4		-	-	-	-	M	-	-	-	-	-	M	M	-	-	-	-
28	Reconciliation Date	N 6		M	M	M	M	M	M	-	-	-	-	M	M	M	M	-	-
29	Reconciliation Number	N 3		M	M	M	M	M	M	-	-	-	-	M	M	M	M	-	-
32	Acquiring Institution Identification Code	LLVARN..11		M	M	M	M	M	M	M	M	M	M	M	M	M	M	O	-
35	Track 2 Data	LLVARs..37	Mandatory if Mag/EMV read.	C	-	C	-	C	-	-	-	-	-	C	-	-	-	-	-
37	Retrieval Reference Number	an 12		M	M	M	M	M	M	M	M	M	M	M	M	-	-	-	-
38	Approval Code	an 6	Mandatory in advices, and if transaction approved. Response may contain ISO field number of invalid field.	C	C	C	C	C	C	-	-	C	-	M	C	-	C	-	-
39	Response Code	N 3		-	M	-	M	-	M	-	-	M	M	-	M	-	M	-	-
41	POS Terminal ID code	n 8		M	M	M	M	M	M	M	M	M	-	M	M	M	-	O	-
42	Card Acceptor ID code	an 15		M	M	M	M	M	M	M	M	M	-	M	M	M	-	O	-
43	Payment Facilitator / Card Acceptor Location Name and Address	LLVARan…99	Mandatory for Payment Facilitator transactions.	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-
44	Additional Response Data	LLVARan…99	See Field Description.	-		-	C	-	-	-	-	-	-	-	-	-	-	-	-
48	Additional Private Data	LLLVARn...999		M	M	M	M	M	M	-	-	-	M	M	M	-	-	-	-
49	Transaction Currency Code	N 3		M	M	M	M	M	M	-	M	-	-	M	M	-	-	-	-

Bit	Field	Attribute	Condition	1100	1110	1200	1210	122x	1230	1304	1305	1314	1315	142x	1430	1500	1510	1804	1814
50	Reconciliation Currency Code	N 3		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
51	Cardholder Billing Currency Code	N 3	Mandatory if DCC used.	C	C	C	C	C	C	-	-	-	M	C	C	-	-	-	-
52	PIN Data (PAC)	b 64	Mandatory if Online PIN used.	C	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-
53	Security Related Information	an 16	Mandatory if online PIN is used, except where DUKPT information is supplied in Field 63, Tag 01.	C	-	C	-	-	-	-	-	-	-	-	-	-	-	-	-
54	Amount, Other	LLLVARans….120	Mandatory for cashback and partial approvals.	C	C	C	C	-	-	-	-	-	-	-	-	-	-	-	-
55	ICC Data	LLLVARb...999	Mandatory in all transactions where chip-card is present.	C	C	C	C	C	C	-	-	-	-	C	C	-	-	-	-
60	Reserved Private Data	LLLVARb...999		M	-	M	-	M	-	C	M	-	-	M	-	-	-	-	-
63	Reserved Private Data III	LLLVARb...999	Mandatory if 1 or more sub-elements supported.	C	-	C	-	C	-	C	-	-	M	C	C	C	-	C	-
64	MAC	b 32	Mandatory if MAC processing supported.	O	O	O	O	O	O	-	-	-	-	O	O	-	-	-	-
74	Credits, Number	N 10		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
75	Credit Reversals, Number	N 10		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
76	Debits, Number	N 10		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
77	Debit Reversals, Number	N 10		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
86	Credits, Amount	N 16		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
87	Credit Reversals, Amount	N 16		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
88	Debits, Amount	N 16		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
89	Debit Reversals, Amount	N 16		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-
97	Net Settlement Amount	x+N 16		-	-	-	-	-	-	-	-	-	-	-	-	M	M	-	-

Legend		
	C	Conditional
	M	Mandatory
	O	Optional
	x	Indicates a decimal digit which results in the number becoming a valid ISO 8583 message type: i.e. 010x indicates 0100, 0101 etc.

Field Descriptions

Message Length

Format: b4
Description: Indicates the total length of the message. The two bytes of the Message Length precede the message and are not included in the length.

Message Type Indicator (MTI)

Format: n4
Description: Indicates the message type of the request/response message..

Request MTI	Response MTI	Transaction description
1100	1110	Pre-Authorisation / Incremental Pre-Authorisation
1200	1210	Sale
1200	1210	Pre-Authorisation Completion
1220/1	1230	Refund / Force / DCC Quote Rejection (Inc. repeats)
1420/1	1430	Sale Reversals (Inc. repeats)
1304	1314	Exchange Rate Request
1305	1315	DCC Inquiry Rate Request
1500	1510	Reconciliation / Batch Closure Message
1804	1814	Network Management Message

Bitmap Primary

Format: b64

Description: 64 bits binary, sent as 8 bytes hexadecimal.

Indicates use of ISO8583 fields 1 – 64.

Example:

- The following fields are present in an incoming message:
  3, 4, 7, 11, 12, 14, 22, 26, 28, 29, 32, 35, 37, 41, 42, 43, 48, 49, 55, 63, 64
- These fields are represented as the value ‘1’ in a string of 64 characters; fields absent are represented as ‘0’:
  0011000000110100000001000101100100101000111000011000001000000011
- This string is converted to binary:
  0011 0000 0011 0100 0000 0100 0101 1001 0010 1000 1110 0001 1000 0010 0000 0011
- The binary is converted to 8 bytes hexadecimal:
  30 34 04 59 28 E1 82 03

Bitmap Secondary

Format: b64

Description: 64 bits binary, sent as 8 bytes hexadecimal. Formatted as per the Primary Bitmap description.

Indicates use of ISO8583 fields 65 – 128.

Field 2: PAN

Format: LLVARn…19 (maximum 19 digits for the PAN + 2 digits for the length)

Description: Primary Account Number

Field 3: Processing Code

Format: n6

Description: Describes the transaction being undertaken.

Processing Code	Description
000000	Sale / Network management / Sale reversal
200000	Refund
900000	Pre-authorisation
910000	Incremental Pre-authorisation
920000	Pre-authorisation completion
930000	DCC quote rejection
940000	Pre-Authorisation reversal
950000	Incremental Pre-authorisation reversal

Field 4: Transaction Amount

Format: n12

Description: The transaction amount in the currency specified in Field 49 (Transaction Currency Code). The location of the decimal point will be determined by the Elavon Host based on the currency provided in Field 49.

The amount with or without decimals must be populated according to the ISO 4217 currency definition.

Example:

- Zero decimal currencies
  - Japanese Yen: 100 Yen is populated as = 100
- 2 decimal currencies
  - Euro: 100 Euro is populated as = 10000
- 3 decimal currencies
  - Kuwaiti Dinar: 100 Kuwaiti Dinar is be populated as = 100000

Please note: a zero amount authorisation request will result in an Account Status Check

Field 6: Cardholder Billing Amount

Format: n12

Description: The transaction amount in the currency specified in Field 51. The location of the decimal point will be determined by the Elavon host based on the currency provided in field 51.

The amount with or without decimals must be populated according to the ISO 4217 currency definition.

Example:

- Zero decimal currencies
  - Japanese Yen: 100 Yen is populated as = 100
- 2 decimal currencies
  - Euro: 100 Euro is populated as = 10000
- 3 decimal currencies
  - Kuwaiti Dinar: 100 Kuwaiti Dinar is be populated as = 100000

Field 10: Conversion Rate

Format: n10

Description: This field details the exchange rate applied in the currency conversion.

Digit 1 represents the number of decimal places and digits 2 – 10 represent the FX rate.

Example:

- 7123456789 equates to a rate of 12.3456789
- 6001357956 equates to a rate of 1.357956

Field 11: System Trace Audit Number (STAN)

Format: n6

Description: Unique number of transaction. This value should be unique on the partner's host system within a 24 hour period. Value feeds to ROC Text.

Field 12: Transaction Date and Time

Format: n12

Description: YYMMDDHHMMSS. This is the date and time at the POS device.

For example, 170312165748 is the 12th March 2017 16:57:48.

Field 14: Expiry Date

Format: n4

Description: The card expiry date in YYMM format. For example, 2001 is January 2020.

Field 22: POS Data Code

Format: an12

Description: 12 alphanumeric characters, each position defining a POS attribute as follows:

Byte 1	Card Data Input Capability / POS Terminal Capabilities
0	Unknown
1	No Terminal used
2	Magnetic stripe reader
5	ICC including magnetic stripe and keyed
6	Key entry
7	Contactless including ICC, magnetic stripe and keyed
8	Contactless only
Byte 2	**Cardholder Authentication Capability**
0	No electronic authentication or unknown
1	PIN
Byte 3	**Card Capture Capability**
0	None or unknown
1	Capture
Byte 4	**Operating Environment**
0	No terminal used or unknown
1	On premises of card acceptor (attended)
2	On premises of card acceptor (unattended) See Field 63 (Reserved Private Data III), Tag 18 (Unattended Acceptance Terminal Indicator)
Byte 5	**Cardholder Present**
0	Cardholder present
1	Cardholder not present (unspecified)
2	Cardholder not present (mail-order)
3	Cardholder not present (telephone)
4	Cardholder not present (standing authorisation)
5	Cardholder not present (electronic transaction)
Byte 6	**Card Present**
0	Card not present
1	Card present

Byte 7	Card Data Input Mode / POS Entry Mode
0	Unspecified, unknown
1	Manual, no terminal
2	Magnetic stripe read
3	Contactless using magnetic stripe data
4	Contactless using ICC data
5	ICC (Chip read)
6	Key entered
8	In-App Ecommerce
9	Fall back transaction – from ICC to manual
A	Credential on File – valid for Visa and MasterCard
B	PAN Auto Entry via Server in contactless debt repayment transactions
W	Reserved For Future Use
Byte 8	**Cardholder Authentication Method**
0	Not authenticated, unknown
1	PIN
5	Manual signature verification
6	Other
Byte 9	**Cardholder Authentication Entity**
0	Not authenticated, unknown
1	ICC
2	Customer Activated Device
4	Merchant
5	Other
Byte 10	**Card Data Output Capability**
0	Unknown
1	None
2	Magnetic Stripe
3	ICC
7	Contactless including ICC, magnetic stripe and keyed
8	Contactless only capability

Byte 11	Terminal Output Capability
0	Unknown
1	None
2	Printing
3	Display
4	Printing and display
Byte 12	**PIN Capture Capability**
0	No PIN Capture Capability
1	Unknown
4	4 character
5	5 character
6	6 character
7	7 character
8	8 character
9	9 character
A	10 character
B	11 character
C	12 character

Example:

- **2 0 0 1 0 1 2 0 0 0 0 0**

  Mag Stripe Terminal / On Premises of Card Acceptor (Attended) / Cardholder Present / Card Present / Magnetic Stripe Read / Cardholder Not Authenticated

- **5 0 0 3 0 1 6 1 0 0 0 0**

  ICC Capable Terminal / ON Premises of Card Acceptor (Attended) / Cardholder Present / Card Present / Data Keyed / PIN Authenticated

- **5 0 0 1 0 1 5 0 0 0 0 0**

  ICC Capable Terminal / On Premises of Card Acceptor (Attended) / Cardholder Present / Card Present / ICC Transaction / Cardholder Not Authenticated

Field 24: Function Code

Format: n3

Description: See table below for possible values.

Value	Use
200	Original 1220 message
201	First repetition of 1220
202	Second repetition of 1220
203	Third repetition of 1220
400	Original 1420 message
401	First repetition of 1420 message
402	Second repetition of 1420
403	Third repetition of 1420
831	Used for session management messages
500	Used in reconciliation messages

Field 25: Reason Code

Format: n4

Description: See table below for possible values.

Value	Use	MTI
1002	Issuer timed out	1220
1003	Issuer unavailable	1220
1004	Terminal processed	1220
1005	Chip processed	1220
1006	Under floor limit	1220
1007	STIP by acquirer	1220
1376	Unspecified or unknown	1220
4000	Customer Cancellation	1420
4006	Late response	1420
4007	Unable to complete transaction	1420
4008	Suspected fraud	1420
4020	Invalid response no action taken	1420

Field 28: Reconciliation Date

Format: n6

Description: YYMMDD. This is the processing date for the partner host system that is initiating the request.

Field 29: Reconciliation Number

Format: n3

Description: For dual message implementations, this value can be defaulted to 001. For single message implementations, this field must mirror the Elavon acquiring host batch number.

Field 32: Acquiring Institution ID Code

Format: LLVARn..11

Description: This code will be allocated by Elavon and is used to identify the partner submitting the requests. This field is also significant in determining single or dual message operation for a given partner.

Please see Important Message Fields section for more details.

Field 35: Track 2

Format: LLVARans..37

Description: There are two track 2 data formats:

- ANSI X4.16
- ISO Standard 7813

ANSI Standard Track 2 Data

The table below shows the ANSI X4.16 Track 2 layout:

Field Name	Length	Value
Start Sentinel	1	;
Card Number	Up to 19	0-9
Field Separator	1	=
Expiration Date	4	YYMM
Effective Date	4	YYMM
Security Code	5	Authentication Code
End Sentinel	1	?
LRC Character	1	LRC Character

Please note the stop and start sentinels and LRC are not sent with the Track 2 contents.

ISO 7813 Standard Track 2 Data

The table below shows the ISO 7813 Track 2 layout:

<table>
<tr><th>Field Name</th><th>Length</th><th>Value</th></tr>
<tr><td>Start Sentinel</td><td>1</td><td>;</td></tr>
<tr><td>Card Number</td><td>Up to 19</td><td>0-9</td></tr>
<tr><td>Field Separator</td><td>1</td><td>=</td></tr>
<tr><td>Expiration Date</td><td>4</td><td>YYMM</td></tr>
<tr><td>Interchange Designator</td><td>1</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>1</td><td>Available for international interchange</td></tr>
<tr><td>2</td><td>Alternative technology (e.g. ICC) available on card</td></tr>
<tr><td>5</td><td>Available for interchange only in country of issue</td></tr>
<tr><td>7</td><td>Not available for general interchange</td></tr>
<tr><td>9</td><td>System test card</td></tr>
</table>
</td></tr>
<tr><td>Service Code</td><td>2</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>01</td><td>No restrictions</td></tr>
<tr><td>02</td><td>No ATM service</td></tr>
<tr><td>03</td><td>ATM service only</td></tr>
<tr><td>10</td><td>No cash advance</td></tr>
<tr><td>11</td><td>No cash advance or ATM service</td></tr>
<tr><td>20</td><td>Requires positive authorisation by issuer or issuer’s agent</td></tr>
</table>
</td></tr>
<tr><td>Effective Date</td><td>4</td><td>YYMM</td></tr>
<tr><td>Security Code</td><td>5</td><td>authentication code</td></tr>
<tr><td>Zero-Filled</td><td>3</td><td>000</td></tr>
<tr><td>Language Code</td><td>2</td><td>Undetermined</td></tr>
<tr><td>End Sentinel</td><td>1</td><td>?</td></tr>
<tr><td>LRC Character</td><td>1</td><td>LRC character</td></tr>
</table>

Please note the stop and start sentinels and LRC are not sent with the Track 2 contents.

ICC Track 2 Equivalent Data

ICC cards can optionally contain a data element (Track 2 Equivalent Data) within the chip. This data element is identified as Tag 57 defined both by the EMV and American Express ICC Payment Specifications. It contains an image of the Track 2 Data present on the magnetic stripe of the card. See the tables above for a definition.

Please note that the start and end sentinels and LRC that are present on the magnetic stripe are not present in the Track 2 Equivalent Data.

Field 37: Retrieval Reference Number

Format: an12

Description: A unique partner transaction reference number. This value should be unique on the partner's host system within a 24 hour period.

Field 38: Approval Code

Format: an6

Description: Issuer approval code for a transaction. In the case of format related rejections, this may contain the field number of the field in error.

The authorisation code returned by the Elavon authorisation host in the initial pre-authorisation response should be populated in all associated incremental pre-authorisation and completion requests from the POS/partner host system.

Field 39: Response Code

Format: n3

Description: The following subset of ISO 8583 response codes may be returned:

Code	Description
000	Approved
001	Partial Approval
100	Do not honour
101	Expired card
106	PIN retries exceeded
107	Refer to card issuer
108	Refer – card issuer special conditions
109	Invalid merchant
110	Invalid amount
111	Invalid card number
117	Invalid PIN
118	No card record
120	Transaction not permitted to terminal
123	Exceeds withdrawal frequency limit
125	Card not active
130	Invalid terminal
131	Sequence number error
132	Must settle batch
133	No transactions

Code	Description
134	Invalid expiry date
135	Invalid BIN
136	Invalid currency
137	Invalid batch number
138	Insufficient Funds / Over Credit Limit[1]
139	Transaction Not Permitted to Issuer / Cardholder[1]
140	Exceeds Withdrawal Count Limit[1]
190	Non-DCC transaction not allowed
301	Not supported
306	Not successful
400	Successful Reversal
500	Reconciliation in Balance
501	Reconciliation out of balance
902	Invalid Transaction
904	Format error
909	Malfunction
916	MAC incorrect
992	Inconsistent with message specification

1 If these codes are returned to the terminal during a Contactless Transaction it is expected that the terminal will prompt for a Contact Transaction.

Field 41: Card Acceptor Terminal Identification

Format: n8

Description: See the Important Message Field section for a description of the way this field should be formatted.

Field 42: Card Acceptor Merchant ID

Format: an15

Description: A unique reference identifying the sales establishment requesting the transaction.

Field 43: Payment Facilitator / Card Acceptor Location Name and Address

Format: LLVARan..99

Description: Name / Address data referencing the sales establishment requesting the transaction.

For Payment Facilitator Processing the following configuration is required:

Position	Type	Description
1-22	an 22	PF DBA Name (name of sub-merchant)
23-35	an 13	PF City (sub-merchant city)
36-38	an 3	PF Country Code (sub-merchant alpha or numeric country code ISO 3166)
39–63	an 25	PF Street Address (sub-merchant address)
64–72	an 9	PF ZIP/Postal Code (sub-merchant zip/postal code)
73–74	an 2	PF State/Province Code (sub-merchant zip/postal code)

Partners who are not Payment Facilitators may choose to populate this optional field as follows:

Position	Type	Description
1-22	an 22	Merchant Name
23-35	an 13	Merchant City name

Field 44: Additional Response Data

Format: LLVARan..99

Description: Additional data to be sent to transaction originator. On a 1210 pre-authorisation completion response this will contain the original pre-authorisation approval code (an6).This field is only returned if a further authorisation was required.

Field 48: Additional Private Data

Format: LLLVAR…999

Description: This will be used to send requests and responses related to services not dealt with by other fields. This data element utilises the Tag, Length, Value (TLV) structure to delineate different sub-elements in the following manner:

<LLL**><**TAG**><**LENGTH**><**VALUE**><**TAG**><**LENGTH**><**VALUE**>** ……

LLL: This describes the aggregate length of the data in data element 48.

Format: 2 bytes BCD (first nibble will be zero filled).

TAG: This sub-field contains a numeric value describing the data that is to follow in the length and value fields. The tag values and the actual data they represent are outlined in the table below.

Format: 2 bytes BCD (first nibble will be zero filled).

LENGTH: This sub-field contains a numeric value that may vary from 0 to 99 describing the length of the data that is to follow in the value sub-field.

Format: 1 byte BCD. (Tag 18 uses 2 bytes BCD).

VALUE: This sub-field contains the data associated with a particular tag. The length of this data should be the same as that indicated in the length sub-field.

Format: see table below for individual tag formats.

Tag	Description	Format	Bytes
001	Item Number	n 3	2
002	ELAVON STAN	n 6	3
003	ELAVON Date and Time	n 12	6
004	ELAVON RRN	an 12	6
005	ELAVON Void item number	n 3	2
017	Forex Generic Info	n 20	10
018	Forex Data	n ..770	..385

Message Type Indicator	Tag 001	Tag 002	Tag 003	Tag 004	Tag 005	Tag 017	Tag 018
1100 Pre-Authorisation Request	M	-	-	-	-	-	-
1110 Pre-Authorisation Response	M	C	C	M	-	-	-
1200 Sale/Completion Request	M	-	-	-	-	-	-
1210 Sale/Completion Response	M	C	C	M	-	-	-
1220 Refund/Force/DCC Quote Rejection Request	M	-	-	-	-	-	-
1221 Refund/Force/DCC Quote Rejection Request	M	-	-	-	-	-	-
1230 Refund/Force/DCC Quote Rejection Response	M	C	C	M	-	-	-
1420 Reversal Request	M	C	C	C	C	-	-
1430 Reversal Response	M	-	-	-	-	-	-
1304 Exchange Rate Request	-	-	-	-	-	-	-
1305 DCC Inquiry Request	-	-	-	-	-	-	-
1314 Exchange Rate Response	-	-	-	-	-	M	M
1315 DCC Inquiry Response	-	-	-	-	-	M	M
Key M = Mandatory	C = Conditional Tag	– Not Required					

Tag 001 (Item Number)

In a Single Message configuration, Tag 001 (Item Number) will increase in value incrementally from 000 to 999 with each approved transaction in a given batch. Once the maximum value of 999 is reached the batch must be closed resulting in the batch number increasing by 1 and the Item Number reverting to 000.

The Item Number should be set to 000 for the first item in a batch.

The Elavon host will return the Item Number value in the appropriate 1110, 1210, 1230 or 1430 response message. The POS device or partner host system should supply this value in Field 48 of the next transaction in order to confirm that it received the previous response.

Dual message solutions should default this field to 001.

Tag 002 (Elavon STAN)

The Elavon STAN will be returned to the POS or partner host system in the event of an approval of a sale transaction. This data must be provided to the Elavon host in the event of a reversal of the aforementioned sale transaction. This sub-field must be populated irrespective of whether single or dual message processing is used.

Tag 003 (Elavon Date and Time)

The Elavon Date and Time will be returned to the POS or partner host system in the event of an approval of a sale transaction. This data must be provided to the Elavon host in the event of a reversal of the aforementioned sale transaction. This subfield must be populated irrespective of whether single or dual message processing is used.

Tag 004 (Elavon RRN)

The Elavon RRN value will be returned to the POS or partner host system in the event of an approval of a sale transaction. This data must be provided to the Elavon host in the event of a reversal of the aforementioned sale transaction. This subfield must be populated irrespective of whether single or dual message processing is used.

Tag 005 (Elavon Void Item Number)

The Elavon Void Item number will only be populated in single message operation. The Elavon Void Item number must be provided to the Elavon host in the event of the reversal of a previously authorised sale (1200), refund or force (1220) transaction.

Please see *Important Message Fields, Field 48 Additional Private Data* for more information on the use of these Tags.

Tag 017 (Forex Generic Info) / Tag 018 (Forex Data)

Tags relates to foreign exchange rate data. Each will contain subfields constructed as follows:

<table>
<tr><th colspan="4">PDS17</th></tr>
<tr><th>Subfield Name</th><th>Usage</th><th>Format</th><th>Bytes</th></tr>
<tr><td>PDS Length</td><td>Length</td><td>n2</td><td>1</td></tr>
<tr><td>Error Indicator</td><td><table><tr><th>Value</th><th>Description</th></tr><tr><td>00</td><td>Successful</td></tr><tr><td>01</td><td>Unsuccessful</td></tr></table>In the event of an unsuccessful attempt the terminal should not make any changes to local rates files or offer DCC following a DCC Inquiry Request.</td><td>n2</td><td rowspan="4">10</td></tr>
<tr><td>Base Currency Code</td><td>The ISO numeric currency code of the base currency to which the exchange rates relate</td><td>n3</td></tr>
<tr><td>Timestamp</td><td>The date and time in GMT at which the exchange rates will expire
Format: CCYYMMDDHHMM</td><td>n12</td></tr>
<tr><td>Mark-Up Percentage</td><td>Mark up percentage, e.g. 250 is 2.5%</td><td>n3</td></tr>
</table>

<table>
<tr><th colspan="4">PDS18</th></tr>
<tr><th>Sub field Name</th><th>Usage</th><th>Format</th><th>Bytes</th></tr>
<tr><td>PDS Length</td><td>Length</td><td>n3</td><td>2</td></tr>
<tr><td>Number of Exchange Rates</td><td>Number of exchange rates to follow. In a DCC Inquiry Response only one DCC rate will be returned.</td><td>n2</td><td>1</td></tr>
<tr><td colspan="4">The following are repeated for each currency code sent:</td></tr>
<tr><td>Currency Code</td><td>ISO Numeric Currency Code</td><td>n3</td><td rowspan="3">6</td></tr>
<tr><td>Conversion Exponent</td><td>Number of digits in the exchange rate exponent</td><td>n1</td></tr>
<tr><td>Conversion Rate</td><td>Exchange rate</td><td>n8</td></tr>
</table>

Field 49: Transaction Currency Code

Format: n3

Description: ISO 4217 numeric currency code of the transaction amount specified in Field 4.

Field 50: Reconciliation Currency Code

Format: n3

Description: ISO 4217 numeric currency code of merchant funding currency.

Field 51: Cardholder Billing Currency Code

Format: n3

Description: ISO 4217 numeric currency code of the transaction amount specified in Field 6.

Field 52: PIN Data

Format: b64

Description: The encrypted PIN block, sent as 8 bytes Hex.

The supported format is ISO 9564-1 & ANSI X9.8 format 0.

Field 53: Security Related Control Information

Format: an16

Description: PIN Encryption control information

This field is mandatory when online PIN data is present, except where DUKPT information is supplied in Field 63, tag 01.

The field is comprised as below:

Position	Description	Value
1-2	Key Type Identifier	**Value** / **Description**: **01** TPK; **02** ZPK
3–4	Key Identifier	03 to 32
5–16	Reserved for future use	000000000000

Please note the Key Type and Key Identifiers will be supplied by the Elavon.

Field 54: Amount, Other

Format: LLLVARans…120

Description: This field will be used to populate the cashback component of a transaction in a request. It may also be used to carry the originally requested amount in a partial approval.

Position	Description	Value
1-2	Amount Type	**Value** / **Description**: **01** Cashback; **02** Partial Approval; **03** Balance Response
3–14	Amount	Cashback / Original Request

The amount with or without decimals must be populated according to the ISO 4217 currency definition. Please see Field 4 (Transaction Amount) for examples.

Field 55: ICC Data

Format: LLLVARb…999

Description: Field 55 is used to transport ICC data.This data element utilises the Tag, Length, Value (TLV) structure to delineate different sub-elements in the following manner:

<LLL**><**TAG**><**LENGTH**><**VALUE**><**TAG**><**LENGTH**><**VALUE**>** ……

Tag	Length	PDS Data
b ..2	**b 1**	**b ..127**

LLL: This describes the aggregate length of the data in Field 55.

TAG: Contains the tag identifying the EMV data object transported in this PDS (e.g. PDS "9F26" corresponds to the EMV tag "9F26"). The PDS Tag consists of either one or two bytes, represented as hexadecimal. The second byte is provided only if the continuation indicator in the first bye is set. Refer to the EMV 98 Specifications for the structure and definition of the EMV tags and definition of the continuation indicator.

LENGTH: Specifies the length (in bytes) of the PDS data, expressed as a binary number in the range 1 to 127.

VALUE: Contains the actual data from the corresponding EMV data object, as identified by the PDS Tag.

PDS's can appear in any order in Field 55.

If DCC is accepted at POS by the cardholder the DCC amount and DCC currency code are used to generate cryptograms. In the case of zero decimal place currencies (i.e. Japanese Yen) follow the below example:

Where Field 6 (Cardholder Billing Amount) = 1000 (10 Yen) use the value 10 to generate the cryptogram.

EMV PDS Name	Required	Values	Format	Bytes
Length Attribute		0LLL – BCD length of data to follow.	n 3	2
Tag 71	OR	Issuer Script Template 1 Scripts from issuer sent to terminal for delivery to ICC. Multiple tags allowed. Collective length of all tags cannot be greater than 128 bytes.	n ..8	See value
TAG 72	OR	Issuer Script Template 2 Scripts from issuer sent to terminal for delivery to ICC. Multiple tags allowed. Collective lengths of all tags cannot be greater than 128 bytes.	n ..8	See value
TAG 82	M	Application Interchange Profile (AIP) Specifies application functions supported by the card. The terminal attempts to execute only those functions that ICC supports.	b 16	2
TAG 84	M	Dedicated File (DF) Name Taken from application (application specific data). As described in ISO/IEC 7816-4.	b VAR	..16

EMV PDS Name	Required	Values	Format	Bytes
TAG 8A	O	Authorisation Response Code (ARC) The ISO 8583 response code received from the network or generated by the terminal.	n 4	2
TAG 91	OR	Issuer Authentication Data (IAD) Sent by the issuer if online issuer authentication is required.	b VAR	16
TAG 95	M	Terminal Verification Results (TVR) Status of the different functions as seen by the terminal during the processing of a transaction.	b 40	5
TAG 9A	M	Transaction Date Taken from terminal clock.	n 6	3
TAG 9C	M	Transaction Type Taken from the transaction data.	n 2	1
TAG 5F2A	M	Transaction Currency Code Taken from the terminal initialisation table or the chip card.	b 16	2
TAG 9F02	M	Authorisation Amount Amount of the transaction as provided by the terminal to the card for cryptogram generation.	n 12	6
TAG 9F03	M for cash back if “9F03” provided by terminal	Amount, Other Secondary amount associated with the transaction representing a cash back amount.	n 12	6
TAG 9F09	O	Terminal Application Version Number Taken from the application (application specific data).	b 16	2
TAG 9F10	M if provided by card	Issuer Application Data Retrieved from the card.	b VAR	..32
TAG 9F1A	M	Terminal Country Code Taken from terminal initialisation table or chip card.	n 3	2
TAG 9F1E	O	Interface Device Serial Number Unique and permanent serial number assigned to the interface device by the manufacturer.	an 8	8
TAG 9F26	M	Application Cryptogram (AC) Used to approve offline transactions.	b 64	8
TAG 9F27	M	Cryptogram Information Data (CID) Used to approve offline transactions.	b 8	1
TAG 9F33	M	Terminal Capabilities Specifies the capabilities of the terminal.	b 24	3

EMV PDS Name	Required	Values	Format	Bytes
TAG 9F34	M	Cardholder Verification Method Results (CVMR) Results of the last cardholder verification method.	b 18	3
TAG 9F35	O	Terminal Type Specifies the type of terminal.	n 2	1
TAG 9F36	M	Application Transaction Counter (ATC) Received from the card.	b 16	2
TAG 9F37	M	Unpredictable Number Value to provide variability and uniqueness to the generation of the application cryptogram.	b 32	4
TAG 9F41	O	Transaction Sequence Counter Counter maintained by the terminal that is incremented by one for each transaction.	n..8	4
TAG 9F53	O	Transaction Category Code / Merchant Category Code Usually provided by the acquirer.	an 1	1
TAG 5F34	M	PAN Sequence Number Retrieved from the card	n 2	1
TAG 9F6E	O	Third Party Data Visa/Diners: Contactless Form Factor Indicator Mandatory for Visa and Diners Contactless transactions. MasterCard: Third Party Data First 8 characters of the value.	n 8	4
TAG 9F7C	O	Visa Customer Exclusive Data	an VAR	..64

Required Column Legend	**O**	Optional
	OR	Optional Response
	M	Mandatory

Format Column Legend	b..mmm	String of 1 (length) + up to mmm bytes
	b m	String of m bytes
	b m (n 2m)	String of m bytes (consisting of 2m BCD digits)
	b m (an m)	String of m bytes

Please note: for Amex processing the ARC value used in the 2Nd Generate AC should be drawn from Tag 91 (IAD) and not Tag 8A (Authorisation Response Code).

Field 60: Reserved Private Data

Format: LLLVARb…999

Description: Field 60 will be used to send requests and responses related to services not dealt with by other fields. This field utilises the Tag, Length, Value (TLV) structure to delineate different sub-elements in the following manner:

<LLL**><**TAG**><**LENGTH**><**VALUE**><**TAG**><**LENGTH**><**VALUE**>** ……

LLL: This describes the aggregate length of the data in field 60.

Format: 2 bytes BCD.

TAG: This subfield contains a numeric value describing the data that is to follow in the length and value fields. The tag values and the actual data they represent are outlined in the table below. Format: 1 bytes BCD.

LENGTH: This subfield contains a numeric value that may vary from 1 to 993 describing the length of the data that is to follow in the value subfield. Format: 2 bytes BCD.

VALUE: This subfield contains the data associated with a particular tag. The length of this data should be the same as that indicated in the length subfield. Format: see table below for individual tag formats.

Tag	Description	Format	Length
01	Application ID	an 8	8

Tag 01: Application ID (Appl ID)

Indicates that the application used by the POS device has been tested and certified for the market segment indicated. Device Type and Unique Software Version components drive DCC functionality. Field is required in all incoming message types with the exception of reconciliation messages and network management messages. It will not appear in any response.

<table>
<tr><th>Position</th><th>Name</th><th>Description / Available Values</th></tr>
<tr><td>1-2</td><td>Protocol Version Number</td><td>Based on protocol version.
Consists of the version number's major digit and second minor digit. Version 2.1 = 21.
Future increments will proceed as follows:
<table>
<tr><th>Version</th><th>Value</th></tr>
<tr><td>2.1</td><td>21</td></tr>
<tr><td>2.2</td><td>22</td></tr>
<tr><td>2.3</td><td>23</td></tr>
<tr><td>2.4</td><td>24</td></tr>
<tr><td>2.5</td><td>25</td></tr>
<tr><td>2.6</td><td>26</td></tr>
<tr><td>2.7</td><td>27</td></tr>
<tr><td>2.8</td><td>28</td></tr>
<tr><td>2.9</td><td>29</td></tr>
<tr><td>3.0</td><td>30</td></tr>
</table></td></tr>
<tr><td>3-4</td><td>Unique Software Version</td><td>This value must be agreed with Elavon prior to use.</td></tr>
<tr><td>5</td><td>Device Type</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>F</td><td>VeriFone Terminal</td></tr>
<tr><td>H</td><td>Hypercom Terminal</td></tr>
<tr><td>I</td><td>Ingenico Terminal</td></tr>
<tr><td>V</td><td>3rd Party Vendor</td></tr>
<tr><td>P</td><td>PC Product</td></tr>
<tr><td>W</td><td>Web Server</td></tr>
<tr><td>E</td><td>External Host</td></tr>
<tr><td>T</td><td>Thales Terminal</td></tr>
</table></td></tr>
<tr><td>6</td><td>Market Segment</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>R</td><td>Restaurant</td></tr>
<tr><td>G</td><td>General Retail</td></tr>
<tr><td>L</td><td>Lodging</td></tr>
<tr><td>M</td><td>Mail Order/Telephone Order</td></tr>
<tr><td>I</td><td>Internet</td></tr>
<tr><td>C</td><td>Cash Advance</td></tr>
</table></td></tr>
<tr><td>7</td><td>Capture Type</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>H</td><td>EDC / Host Based</td></tr>
<tr><td>T</td><td>EDC / Terminal Based</td></tr>
</table></td></tr>
</table>

Position	Name	Description / Available Values
8	**Communication Module (Optional Position)**	

Value	Description
G	Elavon Gateway
A	Elavon API
T	Custom TCP/IP
X	X.25 / X.29
D	Dial
W	Wi-Fi
P	GPRS
S	ISDN
No Value	Space-Filled

Field 63: Reserved Private Data III

Format: LLLVARb…999

Description: Field 63 will be used to send requests and responses related to services not dealt with by other fields. This field utilises the Tag, Length, Value (TLV) structure to delineate different sub-elements in the following manner:

<LLL**><**TAG**><**LENGTH**><**VALUE**><**TAG**><**LENGTH**><**VALUE**>** ……

LLL: This describes the aggregate length of the data in data element 63.

Format: 2 bytes BCD (first nibble will be zero filled).

TAG: This sub-field contains an alphanumeric or numeric value describing the data that is to follow in the length and value fields. The tag values and the actual data they represent are outlined in the table below. Format: 1 byte BCD.

LENGTH: This sub-field contains a numeric value that may vary from 0 to 99 describing the length of the data that is to follow in the value subfield. Format: 2 bytes BCD (first nibble will be zero filled).

VALUE: This sub-field contains the data associated with a particular tag. The length of this data should be the same as that indicated in the length subfield. Format: see table below for individual tag formats.

Tag	Description	Format	Length
01	DUKPT Key Serial Number	b 20	20
02	CVV2 (CVC2)	an 4	4
03	CVV2 (CVC2) Result Code	an 1	1
04	Moto/EC Indicator	n 1	1
05	Ignore TID Indicator	an 1	1
06	Mobile Acceptance Indicator	an 1	1
07	Payment Facilitator Indicator	an 1	1
08	Partial Approval Indicator	an 1	1
09	Address Verification Data	an 49	49
10	Address Verification Response Data	an 1	1
11	Transaction Identifier	an 20	20
12	3D Secure Cardholder Authentication Verification Value (CAVV/AEVV)	an 20	20
13	Universal Cardholder Authentication Field	an 32	32

Tag	Description	Format	Length
14	Financial Institution Data	an 30	30
15	Acceptance Indicator for Card Scheme Data	an 1	1
16	Card Scheme Data	an 22	22
17	Instalment Payment	an 34	34
18	Unattended Acceptance Terminal Indicator (CAT - Cardholder Activated Terminal - Level Indicator)	an 2	2
19	Dual Brand Override Indicator	an 2	2
20	Alphanumeric Terminal ID	an 8	8
21	MasterPass Enabled Merchant Flag	an 1	1
22	Digital Wallet Data	an 5	5
23	UCAF Collection Indicator	n 1	1
24	MasterCard Assigned ID	an 6	6
25	Unique Transaction Response Reference Number	an 11	11
26	Payment Facilitator Additional Information	an 92	92
27	DCC Reference Number	n 14	14
28	Transit Transaction Data	n 4	4
29	PAN Association Data	an 27	27
30	Credential on File Indicator	an 1	1
31	Merchant Initiated Transaction Indicator	an 2	2
32	Debt Repayment Indicator	an 1	1

Please note that support for Tag 16 (Card Scheme Data) and Tag 25 (Unique Transaction Reference Number) in Response Messages is mandatory.

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>01</td><td>DUKPT Key Serial Number</td><td>Contains the Key Serial Number (KSN) for DUKPT encryption that is associated with the PIN data contained in Field 52. The Key Serial Number is a 10 byte composite field that is transmitted as 20 bytes as it contains binary data. The 10 bytes before they are expanded to ASCII character representation are composed as follows:
<table>
<tr><th>Bytes</th><th>Description</th><th>Bits</th></tr>
<tr><td>1-2</td><td>Hexadecimal F’s</td><td>16</td></tr>
<tr><td>3-5</td><td>Base Derivation Key ID</td><td>24</td></tr>
<tr><td>6-7 + 3 bits of byte 8</td><td>Terminal Device ID</td><td>19</td></tr>
<tr><td>Bits 4-8 of byte 8 + byte 9-10</td><td>Encryption Counter</td><td>21</td></tr>
</table></td></tr>
<tr><td>02</td><td>Card Verification Value (CVV2/CVC2)</td><td>CVV2 value as printed on the card.
MasterCard and Visa: 3 bytes, left justified, space filled.
American Express: 4 bytes.</td></tr>
<tr><td>03</td><td>Card Verification Value (CVV2/CVC2) Result Code</td><td>CVV2 result code as provided by the card issuer.</td></tr>
<tr><td>04</td><td>Mail Order/Telephone Order/Ecommerce Indicator (MOTO/ECI)</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>0</td><td>Cardholder Present</td></tr>
<tr><td>1</td><td>Mail Order/Telephone Order (MOTO) Transaction</td></tr>
<tr><td>2</td><td>Recurring Transaction</td></tr>
<tr><td>3</td><td>Instalment Payment (not currently supported)</td></tr>
<tr><td>5</td><td>Ecommerce Fully Authenticated 3D Secure Transaction (see also Field 63, Tags 11, 12 and 13)</td></tr>
<tr><td>6</td><td>Ecommerce 3D Secure Authentication Attempt supported by merchant / cardholder does not participate (see also Field 63, Tags 11, 12 and 13)</td></tr>
<tr><td>7</td><td>Ecommerce Unsecure Transaction using SSL or Channel Encryption</td></tr>
</table></td></tr>
<tr><td>05</td><td>Ignore TID Indicator</td><td>Terminal ID will be ignored by Elavon Authorisation Host, but passed to schemes and included in Response Messages. Elavon Host will refer to the Elavon Merchant ID provided in the message. The Ignore Terminal ID Indicator is not compatible with Single Message (Host Based) configurations.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>Ignore Terminal ID. Terminal ID assigned by customer.</td></tr>
</table></td></tr>
<tr><td>06</td><td>Mobile Acceptance Indicator</td><td>This field indicates that the point of acceptance is a mobile device or tablet computer.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>M</td><td>Mobile device used</td></tr>
</table></td></tr>
<tr><td>07</td><td>Payment Facilitator Indicator</td><td>Indicates Payment Facilitator acceptance. If present Field 43 Payment Facilitator values must be populated.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>Payment Facilitator</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>08</td><td>Partial Approval Indicator</td><td>
Specifies whether a terminal supports partial approval.

The option of a partial approval must not be offered for an authorisation with cashback.

If the issuer grants a partial approval but this indicator was not set the terminal will receive a decline in the response message. The Elavon acquiring host will generate a reversal to the issuer.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>Supports Partial Approval responses</td></tr>
</table>
</td></tr>
<tr><td>09</td><td>Address Verification Service (AVS) Request Data</td><td>
Contains address data of the Cardholder.

Format 1:
<table>
<tr><th>Position</th><th>Type</th><th>Description</th></tr>
<tr><td>1-9</td><td>an 9</td><td>Subfield contains only numerics from the postcode.</td></tr>
<tr><td>10-49</td><td>ans 40</td><td>Subfield contains up to 5 numerics from the cardholder’s billing address.</td></tr>
</table>
Format 2:
<table>
<tr><th>Position</th><th>Type</th><th>Description</th></tr>
<tr><td>1-9</td><td>an 9</td><td>Subfield contains complete postcode.</td></tr>
<tr><td>10-49</td><td>ans 40</td><td>Subfield contains cardholder billing address.</td></tr>
</table>
<table>
<tr><th>Postal address</th><th>Pos</th><th>Value</th></tr>
<tr><td rowspan="2">Flat. 4a
123 London Road, London
CH48 8AQ</td><td>1-9</td><td>488^^^^^^</td></tr>
<tr><td>10-49</td><td>4123^..^</td></tr>
<tr><td rowspan="2">1 Elm Street
Valley Stream
NY 1151</td><td>1-9</td><td>1151^^^^^</td></tr>
<tr><td>10-49</td><td>1^..^</td></tr>
<tr><td rowspan="2">Spachbrücker Str
21, 64354 Reinheim</td><td>1-9</td><td>64354^^^^^</td></tr>
<tr><td>10-49</td><td>21^..^</td></tr>
<tr><td rowspan="2">The Ridings
Dean Court, Guildford
GU14 7SR</td><td>1-9</td><td>147^^^^^^</td></tr>
<tr><td>10-49</td><td>^..^</td></tr>
</table>
</td></tr>
<tr><td>10</td><td>Address Verification Service (AVS) Response Data</td><td>
AVS result code.
<table>
<tr><th>Value</th><th>Response</th><th>Description</th></tr>
<tr><td>N</td><td>No Match</td><td>Match is not exact. Post code and/or address do not match.</td></tr>
<tr><td>U</td><td>Unavailable</td><td>Address information is unavailable or Issuer does not support AVS. Acquirer has re-presentment rights.</td></tr>
<tr><td>F</td><td>Exact Match</td><td>The match is exact. Both post code and address match. No re-presentment rights.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>11</td><td>Transaction Identifier (XID)</td><td>Verified by Visa XID value / America Express Safekey XID Value

Value will be received from the Merchant Plug-In (MPI) in BASE64. This should be converted to a HEX string. The first 20 characters of the HEX string should be used to populate this Tag.

This Tag must be present if Tag 04 is set as value 5 or 6.

Please note: for tokenised Verified by Visa transactions this field will carry the TAVV (Token Authentication Verification Value).</td></tr>
<tr><td>12</td><td>3D Secure Cardholder Authentication Verification Value (CAVV/AEVV)</td><td>Value will be received from the Merchant Plug-In (MPI) in BASE64. This should be converted to binary coded decimal (BCD). The first 32 characters of this value are used to populate this field.

<table><tr><th>Scheme</th><th>Contents</th></tr><tr><td>Verified by Visa</td><td>CAVV</td></tr><tr><td>American Express SafeKey</td><td>AEVV</td></tr><tr><td>Diners ProtectBuy</td><td>CAVV</td></tr><tr><td>MasterCard SecureCode</td><td>Not Applicable</td></tr></table>
Note: This Tag must be present if Tag 04 is set as value 5 or 6.

If Cardholder Authentication Verification Value data is not present in Verified By Visa ecommerce transactions (PAN or Token) the transactions will be downgraded</td></tr>
<tr><td>13</td><td>Universal Cardholder Authentication Field (UCAF)</td><td>MasterCard Secure Code UCAF value.

Value is received from the Merchant Plug-In (MPI) in BASE64. The first 28 characters of the BASE64 value should be used to populate this Field. This is applicable for MasterCard and Maestro ecommerce acceptance only.

This Tag must be present if Tag 04 is set as value 5 or 6.

Please note: UCAF value is not mandatory for tokenised transactions.</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>14</td><td>Financial Institution Data</td><td>
Required for UK Domestic Transactions under the following Merchant Category Codes:

MCC 6012 – Visa/MasterCard – Please see Debt Repayment Field
MCC 6050 - MasterCard
<table>
<tr><th>Position</th><th>Type</th><th>Data Description</th></tr>
<tr><td>1-8</td><td>an 8</td><td>Date of birth of primary recipient. Format: YYYYMMDD (year, month, date)
Note: No default date is captured.</td></tr>
<tr><td>9-18</td><td>an 10</td><td>Partially masked PAN or account number of recipient.
Card-to-Card Payments: First 6 and last 4 characters of recipient PAN (no spaces)
Card-to-Non-Card Payments: Up to 10 characters of recipient account number details.
If the account number is under 10 characters then the remaining field locations are populated with an asterisk (*).</td></tr>
<tr><td>19-24</td><td>an 6</td><td>First part of the post code (district) which UK acquirers are required to populate.
E.G. postcode KA27 8AA becomes KA27.
If the first part of the post code is only 2 characters then the remaining field locations must be left blank.</td></tr>
<tr><td>25-30</td><td>an 6</td><td>First 6 characters of the recipient’s surname. Only alphabetic characters to be used (Latin characters such as A, B, C or a, b, c etc.).
If the surname is shorter than 6 characters then the remaining field locations are populated with an asterisk (*).</td></tr>
</table>
The data must be arranged in sequential order without special characters or delimiters to discern subsections.

Example 1: Customer with UK Address and surname longer than 6 characters. ‘_’ denotes a space.
<table>
<tr><td>Position</td><td>1-8</td><td>9-18</td><td>19-24</td><td>25-30</td></tr>
<tr><td>Value</td><td>19840501</td><td>1234569999</td><td>KA27__</td><td>Witwic</td></tr>
</table>
Example 2: Customer with bank account and surname shorter than 6 characters. ‘_’ denotes a space.
<table>
<tr><td>Position</td><td>1-8</td><td>9-18</td><td>19-24</td><td>25-30</td></tr>
<tr><td>Value</td><td>19870629</td><td>123456****</td><td>XX____</td><td>Fong**</td></tr>
</table>
</td></tr>
<tr><td>15</td><td>Card Scheme Data Acceptance Indicator</td><td>
Flag in requests to indicate that Card Scheme Data can be received and processed on the partners host or terminal

Please advise Elavon if Card Scheme Data cannot be supported.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>Card Scheme Data Supported</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>16</td><td>Card Scheme Data</td><td>Data will be returned to the partner host system or POS terminal in approved responses where Tag 15 in the corresponding request is set to Y. This is retain and return data for the various Reversal messages. Data must also be populated in the equivalent fields on the corresponding submission file if applicable.
<table>
<tr><th>Scheme</th><th>Pos 1</th><th>Pos 2-16</th><th>Pos 17-20</th><th>Pos 21-22</th></tr>
<tr><td>Visa</td><td>ACI value</td><td>Transaction ID</td><td>Validation Code</td><td>ALP/ Product ID</td></tr>
<tr><td>MasterCard</td><td>M</td><td>BankNet Ref. Nbr</td><td>BankNet Date</td><td>Spaces</td></tr>
<tr><td>Discover</td><td>D</td><td>NRID</td><td>Track Data Condition Code (LF – space filled)</td><td>Spaces</td></tr>
<tr><td>AMEX</td><td>A</td><td>Transaction ID</td><td>Spaces</td><td>Spaces</td></tr>
</table>
<table>
<tr><th>Scheme</th><th>Pos 1</th><th>Pos 2-7</th><th>Pos 8-17</th><th>Pos 18-20</th><th>Pos 21–22</th></tr>
<tr><td>Union Pay</td><td>B</td><td>STAN</td><td>Date and Time</td><td>Settlement Date</td><td>Spaces</td></tr>
</table></td></tr>
<tr><td>17</td><td>Instalment Payment</td><td>Supports the transmission of Instalment payment data. The indicated transaction may be the first or a subsequent transaction. In all cases the initial transaction of such a series must be identified as an Instalment payment. Currently not supported by Elavon.
<table>
<tr><th>Pos</th><th>Type</th><th>Description</th></tr>
<tr><td>1</td><td>an 12</td><td>Total Amount. Contains the payments total.
Zero-filled, right-justified.</td></tr>
<tr><td>2</td><td>an 3</td><td>Currency Code. Contains the currency code of the payment submitted.</td></tr>
<tr><td>3</td><td>an 3</td><td>Number of Instalments. Contains the number of Instalment payments that will occur.
Zero-filled, right-justified.</td></tr>
<tr><td>4</td><td>an 12</td><td>Amount of each Instalment. Contains the amount of each Instalment payment.
Zero-filled, right-justified.</td></tr>
<tr><td>5</td><td>an 3</td><td>Instalment Payment Number. Contains the Instalment payment number.
Zero-filled, right-justified.</td></tr>
<tr><td>6</td><td>an 1</td><td>Frequency of Instalments. Contains the frequency of the Instalment payments. Valid values are:
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>B</td><td>B-Weekly</td></tr>
<tr><td>M</td><td>Monthly</td></tr>
<tr><td>W</td><td>Weekly</td></tr>
</table></td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>18</td><td>Unattended Acceptance Terminal Indicator (CAT Level)</td><td>Indicates the type of unattended terminal.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>01</td><td>Automated dispensing machine with PIN. Online authorised.
Examples:
ATM
Fuel Purchase with PIN</td></tr>
<tr><td>02</td><td>Self-service terminal.
Examples:
Fuel Purchase without PIN (No CVM), online authorised.
Prepaid Card Purchase
Video Rental</td></tr>
<tr><td>03</td><td>Limited amount terminal without PIN (No CVM). Offline.
Examples:
Road Toll
Motion Picture Theatre
Parking Garage Fee</td></tr>
</table></td></tr>
<tr><td>19</td><td>Dual Brand Override Indicator</td><td>Denotes the brand selected by the customer at the Point of Interaction. Only applies to dual branded cards, only supported for Union Pay cards at present.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>UP</td><td>Union Pay</td></tr>
</table></td></tr>
<tr><td>20</td><td>Alphanumeric Terminal ID</td><td>Populated when an Alphanumeric Terminal ID is used at the Point of Interaction. Tag is left-justified with trailing spaces.

Field 41 (Card Acceptor Terminal Identification) must be zero-filled when Tag 20 is populated. Alphanumeric Terminal IDs are not compatible with Single Message (Host Based) configurations.</td></tr>
<tr><td>21</td><td>MasterPass Enabled Merchant Flag</td><td>Indicates that the merchant is enabled to process via the MasterPass Wallet. This does not require that MasterPass Digital Wallet is present. MasterCard only.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>MasterPass supported</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>22</td><td>Digital Wallet Data</td><td>
<table>
<tr><th>Pos</th><th>Name</th><th>Description</th></tr>
<tr><td>1</td><td>Digital Wallet Type</td><td>
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>V</td><td>V.Me</td></tr>
<tr><td>M</td><td>MasterPass</td></tr>
</table>
</td></tr>
<tr><td>3-6</td><td>Digital Wallet Data</td><td>V.Me
<table>
<tr><th>Pos</th><th>Description</th></tr>
<tr><td>1-2</td><td>Additional Authorisation Method</td></tr>
<tr><td>3-4</td><td>Additional Authorisation Reason Code</td></tr>
</table>
MasterPass
<table>
<tr><th>Pos</th><th>Description</th></tr>
<tr><td>1-3</td><td>Wallet Identifier
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>101</td><td>Remote Ecommerce</td></tr>
<tr><td>102</td><td>Remote NFC</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Space-filled</td></tr>
</table>
Please note: While values 101 and 102 were initially introduced, other values may be transmitted by MasterPass. MasterCard will not publish these values and as such, acquirer and processor systems should pass whatever value is provided by the MasterPass wallet unaltered in the transaction record.</td></tr>
</table>
.
</td></tr>
<tr><td>23</td><td>UCAF Collection Indicator</td><td>Contains the result of UCAF validation
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>0</td><td>Merchant does not participate in UCAF scheme</td></tr>
<tr><td>1</td><td>Merchant participates / Attempted UCAF data is present</td></tr>
<tr><td>2</td><td>Merchant participates / UCAF data is present</td></tr>
<tr><td>3</td><td>MasterPass Only: Maestro Basic Checkout</td></tr>
</table>
</td></tr>
<tr><td>24</td><td>MasterCard Assigned ID</td><td>Contains the MasterCard Assigned Merchant ID. This field is required if the UCAF Collection Indicator Field contains the value 3 (Maestro Basic Checkout).</td></tr>
<tr><td>25</td><td>Unique Transaction Response Reference Number</td><td>Contains a unique Elavon generated reference number populated in response messages only. This value should subsequently be populated in settlement. Please note: this tag should not be used in request messages.</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>26</td><td>Payment Facilitator Additional Information</td><td>Contains additional information required for Payment Facilitators. Alphanumeric fields should be left justified with trailing spaces. Numeric fields should be right justified with leading zeros.
<table>
<tr><th>Position</th><th>Type</th><th>Description</th></tr>
<tr><td>1-14</td><td>an 14</td><td>PF Sub-Merchant ID (MID number of sub-merchant) This should not match the value in Field 42 (Card Acceptor Merchant ID)</td></tr>
<tr><td>15-18</td><td>n 4</td><td>PF Sub-Merchant MCC (MCC of sub-merchant)</td></tr>
<tr><td>19-38</td><td>an 20</td><td>PF Phone Number (sub-merchant phone number) Amex Only</td></tr>
<tr><td>39-78</td><td>an 40</td><td>PF Email Address (sub-merchant email address) Amex Only</td></tr>
<tr><td>79-92</td><td>n 14</td><td>PF Tax ID (sub-merchant Tax ID) Space-Fill if not available</td></tr>
</table></td></tr>
<tr><td>27</td><td>DCC Reference Number</td><td>Unique DCC reference number assigned by the Elavon Host. Format = YYMMDDHHMMnnnn where nnnn is a random number generated by the Host. To be returned in all subsequent authorisation and settlement messages from the terminal to the Host.</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>28</td><td>Transit Transaction Data</td><td>
<table>
<tr><th>Position</th><th>Type</th><th>Description</th></tr>
<tr><td>1-2</td><td>n 2</td><td>Transit Transaction Type Indicator
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>01</td><td>Pre-Funded</td></tr>
<tr><td>02</td><td>Real-Time Authorised</td></tr>
<tr><td>03</td><td>Post-Authorised Aggregated</td></tr>
<tr><td>04</td><td>Authorised Aggregated Split Clearing</td></tr>
<tr><td>05</td><td>Other</td></tr>
<tr><td>06</td><td>Post-Authorised Aggregated Maestro</td></tr>
<tr><td>07</td><td>Debt Recovery</td></tr>
</table></td></tr>
<tr><td>3-4</td><td>n 2</td><td>Transportation Mode Indicator
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>00</td><td>Unknown</td></tr>
<tr><td>01</td><td>Urban Bus</td></tr>
<tr><td>02</td><td>Interurban Bus</td></tr>
<tr><td>03</td><td>Light Train Mass Transit</td></tr>
<tr><td>04</td><td>Train</td></tr>
<tr><td>05</td><td>Commuter Train</td></tr>
<tr><td>06</td><td>Waterborne Vehicle</td></tr>
<tr><td>07</td><td>Toll</td></tr>
<tr><td>08</td><td>Parking</td></tr>
<tr><td>09</td><td>Taxi</td></tr>
<tr><td>10</td><td>High-Speed Train</td></tr>
<tr><td>11</td><td>Rural Bus</td></tr>
<tr><td>12</td><td>Express Commuter Train</td></tr>
<tr><td>13</td><td>Para Transit</td></tr>
<tr><td>14</td><td>Self-Drive Vehicle</td></tr>
<tr><td>15</td><td>Coach</td></tr>
<tr><td>16</td><td>Locomotive</td></tr>
<tr><td>17</td><td>Powered Motor Vehicle</td></tr>
<tr><td>18</td><td>Trailer</td></tr>
<tr><td>19</td><td>Regional Train</td></tr>
<tr><td>20</td><td>InterCity</td></tr>
<tr><td>21</td><td>Funicular Train</td></tr>
<tr><td>22</td><td>Cable Car</td></tr>
</table></td></tr>
</table>
.
</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>29</td><td>PAN Association Data</td><td>PAN Association Data provided as part of a Transit Transaction.
<table>
<tr><th>Position</th><th>Type</th><th>Description</th></tr>
<tr><td>1</td><td>an 1</td><td>Account Number Indicator
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>E</td><td>Embossed account number provided by Issuer</td></tr>
<tr><td>L</td><td>Pay with Rewards Loyalty Program Operator (LPO) card</td></tr>
<tr><td>M</td><td>Primary account number</td></tr>
<tr><td>P</td><td>PayPass account number</td></tr>
<tr><td>R</td><td>Pay with Rewards card</td></tr>
<tr><td>V</td><td>Virtual card number</td></tr>
</table></td></tr>
<tr><td>2-20</td><td>n 19</td><td>Account Number</td></tr>
<tr><td>20-24</td><td>n 4</td><td>Expiration Date YYMM</td></tr>
<tr><td>25-27</td><td>an 3</td><td>Product Code (See Appendix C)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>30</td><td>Credential on File Indicator</td><td>Indicates status of Credential on File transaction initiated by Merchant. Card Scheme Data from original authorisation must be present in message.

If the transaction is initiated by the cardholder (Cardholder Initiated Transaction (CIT)) then Field 22 (POS Data Code), Byte 7 (Card Data Input Mode) will be set to A (Credential on File) but this Field is not required

In the event of a Reversal the same Credential on File value used in the original authorisation must be populated.

<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>S</td><td>Storing Credential on File – valid for Visa and MasterCard

Indicates that the transaction is being processed with the intention of retaining the cardholder’s details for future Recurring, Instalment or Unscheduled transactions.</td></tr>
<tr><td>U</td><td>Unscheduled Credential on File Transaction – valid for Visa only

Represents a transaction using a stored credential that does not occur on a scheduled or regularly occurring transaction date.</td></tr>
<tr><td>I</td><td>Instalment Transaction using Stored Credential – valid for Visa and MasterCard

Represents a cardholder agreement to allow a merchant to initiate one or more future transactions over a period for a single purchase of goods or services.</td></tr>
<tr><td>R</td><td>Recurring Transaction using Stored Credential – valid for Visa and MasterCard

Represents a cardholder agreement to allow a merchant to initiate future transactions for the purchase of goods or services at regular fixed intervals.</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Tag</th><th>Name</th><th>Description</th></tr>
<tr><td>31</td><td>Merchant Initiated Transaction Indicator</td><td>Indicates reason for Merchant Initiated Transaction. Valid for Visa only. Card Scheme Data from original authorisation must be present in message.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>01</td><td>Resubmission
Allows a merchant to resubmit an authorisation that has been declined due to insufficient funds after delivery of goods or services. 14 day time limit.</td></tr>
<tr><td>02</td><td>Delayed Charge
Allows a merchant to process a supplemental charge after original services and respective payment has been processed. 120 day time limit.</td></tr>
<tr><td>03</td><td>Reauthorisation
Allows the processing of split or delayed ecommerce shipments.
Allows the extension of authorisations relating to hotel stays, car rentals and cruise lines. 120 day time limit.</td></tr>
<tr><td>04</td><td>No-Show
Allows a merchant to perform a No-Show transaction in accordance with the merchant’s cancellation policy.</td></tr>
</table></td></tr>
<tr><td>32</td><td>Debt Repayment Indicator</td><td>Indicates a Debt Repayment Instalment Transaction. Used in conjunction with MCC 6012 in the Financial Institution Data Field where applicable. Only applicable to Debit Card Transactions.

Field 60 (Reserved Private Data III), Tag 04 (Mail Order/Telephone Order/Ecommerce Indicator) must equal 1 (Mail/Telephone Order) or 2 (Recurring) or 3 (Instalment).

Required for authorisation and authorisation reversal.
<table>
<tr><th>Value</th><th>Description</th></tr>
<tr><td>Y</td><td>Debt Repayment Transaction</td></tr>
</table></td></tr>
</table>

Field 64: MAC

Format: b32

Description: The MAC is derived by creating a composite (a linear concatenation) of the following fields (see below) and encrypting it with the MAC key provided by Elavon.

- Field 2 (PAN)
- Field 3 (Processing Code)
- Field 4 (Transaction Amount)
- Field 11 (System Trace Audit Number)
- Field 14 (Expiry Date)
- Field 25 (Reason Code)
- Field 32 (Acquiring Institution ID Code)
- Field 38 (Approval Code)
- Field 39 (Response Code)

If a field is not present in a particular message, it is omitted from the composite.

Variable length Fields 2 and 32 must be prepended with their 2 byte lengths. If the length is an odd number, the data portion must be prepended with a **zero** (note that the length value should not be increased). For example, an 11 digit Acquirer ID of '01008600009' would be added to the composite as '11**0**01008600009'.

As the authorisation code (Field 38) may contain alpha characters, it should be represented in ASCII encoding. For example, an authorisation code of 'XYZ123' would be added to the composite as '58595A313233'. A code of '19' would be added as '313920202020'.

The 3 digit response code (Field 39) should be prepended with a zero such that 4 digits are added to the composite.

The composite, once created, should be right padded with zeros (if necessary) such that the overall composite length is divisible by 8.

The encryption method used is a single DES calculation. Using a Thales/Racal HSM, MAC generation is performed within the Elavon host system using the 'M6' command. MAC validation is performed using the 'M8' command.

Key management will be performed manually. A three-part transport key will be created by Elavon and then sent in the clear (but in an appropriately secure manner) to the third party integrator. Elavon will then send a MAC key (encrypted under the transport key) to the third party integrator.

Field 74: Number of Refunds

Format: n10

Description: Number of refunds in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29.

Field 75: Number of Cancelled Sales

Format: n10

Description: Number of cancelled sales in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29.

Field 76: Number of Sales

Format: n10

Description: Number of sales in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29.

Field 77: Number of Cancelled Refunds

Format: n10

Description: Number of cancelled refunds in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29.

Field 86: Amount of Refunds

Format: n16

Description: Amount of refunds in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29. Two decimal digits implied.

Field 87: Amount of Cancelled Sales

Format: n16

Description: Amount of cancelled sales in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29. Two decimal digits implied.

Field 88: Amount of Sales

Format: n16

Description: Amount of sales in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29. Two decimal digits implied.

Field 89: Amount of Cancelled Refunds

Format: n16

Description: Amount of cancelled refunds in reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29. Two decimal digits implied.

Field 97: Reconciliation Net Amount

Format: X + n16

Description: Net amount of reconciliation period; that is, those included in session/batch which date is specified in Field 28 and session/batch number specified in Field 29. Two decimal digits implied. This value is calculated as follows:

is calculated as follows:

Field 97 = Field 86 + Field 87 – Field 88 – Field 89

The interchange indicator (X) at the start of this field will have the following values:

‘D’ – If the Net Amount of reconciliation is less than zero.

‘C’ – If the Net Amount of reconciliation is greater than or equal to zero.

Appendices

Appendix A: X25 communications

X25 connectivity will be made over permanently connected SVCs. The

Elavon host system can establish multiple connections to one partner. Two is considered the minimum to achieve resilience and load sharing. An SVC is connected and maintained as follows:

1) Make an X25 call to the appropriate NUA
2) If the call is accepted, check the status of the SVC, otherwise go back to 1
3) If the SVC is connected, go to data transfer mode (start sending and receiving) otherwise clear the SVC and go back to 1.
4) Should the SVC disconnect, clear it and go back to 1.

TCP/IP communications

Establishing and maintaining a TCP/IP connection uses a similar logic flow to that for X25.

Appendix B: Message Authentication Code (MAC) Generation and Validation

Field 64 (MAC) is derived by creating a composite (a simple linear concatenation) of the following fields:

- Field 2 (PAN)
- Field 3 (Processing Code)
- Field 4 (Transaction Amount)
- Field 11 (System Trace Audit Number)
- Field 14 (Expiry Date)
- Field 25 (Reason Code)
- Field 32 (Acquirer Institution ID Code)
- Field 38 (Approval Code)
- Field 39 (Response Code)

The resulting value is encrypted it with a MAC key. If a field is not present in a particular message, it is omitted from the composite.

The encryption method used is a single DES calculation. Using a Thales/Racal HSM, the encryption/MAC generation is performed within the Elavon host system using HSM command

M6 and the decryption/MAC validation is performed using the HSM command M8.

Key management will be performed manually. A three-part transport key will be created by

Elavon and then sent in the clear (but in an appropriately secure manner) to the third party integrator. Elavon will then send a MAC key (encrypted under the transport key) to the third party integrator.

Appendix C: Product Codes

The Product Code is a three character indicator provided by MasterCard in the IPM Clearing Format document (15th April 2011) which can include the following values in the below table.

The Product Code is derived from the 'Product Class Override Indicator' in the MasterCard 'PDS 0002 – GCMS Product Identifier' table.

Code	Sub Code	Description
MCB	MLD	MasterCard Distribution Card
MCB	MPC	MasterCard Professional Card
MCB	MPW	Debit MasterCard Business Card Prepaid Workplace Business to Business
MCB	MXB	Debit Card X Code
MCC	MCC	MasterCard Credit Card (mixed BIN)
MCC	MHC	MasterCard Healthcare Credit Non-Substantiated
MCD	MCD	Debit MasterCard Card
DMC	MCD	Debit MasterCard Card
MCC	MCA	MasterCard Electronic Card
MCE	MCA	MasterCard Electronic Card
MCE	MCE	MasterCard Electronic Card
MCE	MED	Debit MasterCard Electronic Card (non-U.S.)
MCE	MIB	MasterCard Electronic Student Card
MCE	MIH	Debit MasterCard Electronic Student Card
MCE	MRL	Prepaid MasterCard Electronic Commercial Card (Non-U.S.)
MCC	MCE	MasterCard Electronic Card
MCC	MED	Debit MasterCard Electronic Card (Non-U.S.)
MCC	MIB	MasterCard Electronic Student Card
MCC	MIH	Debit MasterCard Electronic Student Card (Non-U.S.)
MCC	MRL	Prepaid MasterCard Electronic Commercial Card (Non-U.S.)
MCF	MCF	MasterCard Fleet Card
MCF	MDM	Middle Market Fleet Card
MCG	MCG	Gold MasterCard Card
MCS	MCS	Standard MasterCard card
MCS	MCU	Unembossed MasterCard Card
MCS	MIC	Standard MasterCard Student Card
MCS	MIG	Unembossed MasterCard Student Card
MCS	MIJ	Debit MasterCard Unembossed Non-U.S. Student Card
MCS	MSD	MasterCard Deferred Debit Consumer
MCH	MCH	MasterCard Premium Charge
MCO	MCM	MasterCard Corporate Meeting Card

Code	Sub Code	Description
MCO	MCO	MasterCard Corporate Card
MCO	MDQ	Middle Market Corporate Card
MCO	MLA	MasterCard Central Travel Solutions Air Card
MCO	MLL	MasterCard Central Travel Solutions Land Card
MCP	MCP	MasterCard Purchasing Card
MCP	MDN	Middle Market Purchasing Card
MCC	MCS	Standard MasterCard Card
MCC	MCU	Unembossed MasterCard Card
MCC	MIC	Standard MasterCard Student Card
MCC	MIG	Unembossed MasterCard Student Card
MCC	MIJ	Debit MasterCard Unembossed Non-U.S. Student Card
MIU	MIU	Debit MasterCard Unembossed (Non-U.S.)
MCC	MIU	Debit MasterCard Unembossed (Non-U.S.)
MCC	MSD	MasterCard Deferred Debit Consumer
MCT	MCT	Titanium MasterCard Card
MCT	MCV	Merchant-Branded Program
MCW	MCW	World MasterCard Card
MDG	MDG	Gold Debit MasterCard Card
MDG	MXG	Gold Debit MasterCard Card
MDH	MDH	World Debit Embossed MasterCard Card
MDH	MDI	World Debit MasterCard Card
MDH	WDR	World Debit MasterCard® Rewards
MDJ	MDJ	Debit Other 2 Embossed
MDJ	MDK	Debit Other 2 Unembossed
MDL	MDL	Business Debit Other Embossed
MDO	MDO	Debit Other
MDO	MXO	Debit Card Other
MDP	MDP	Platinum Debit MasterCard Card
MDP	MEP	Premium Debit MasterCard Card
MDP	MUP	Premium Debit Unembossed MasterCard Card
MDP	MXP	Platinum Debit MasterCard Card
MDP	MDR	Debit Brokerage
MDP	MXR	Debit Card Brokerage
MDP	MET	Titanium Debit MasterCard®
MDS	MDS	Debit MasterCard Card
MDS	MDU	Debit Unembossed MasterCard Card
MDS	MHA	MasterCard Healthcare Prepaid Non-tax

Code	Sub Code	Description
MDS	MHB	MasterCard HSA Substantiated
MDS	MHH	MasterCard HSA Non-Substantiated
MDS	MID	Debit Unembossed MasterCard Student Card
MDS	MIS	Debit MasterCard Standard Student Card
MDS	MPA	MasterCard Prepaid Debit Standard – Payroll
MPF	MPF	MasterCard Prepaid Debit Standard - Gift
MDS	MPF	MasterCard Prepaid Debit Standard – Gift
MPM	MPM	MasterCard Prepaid Debit Standard – Consumer Incentive
MDS	MPM	MasterCard Prepaid Debit Standard – Consumer Incentive
MPN	MPN	MasterCard Prepaid Debit Standard – Insurance
MDS	MPN	MasterCard Prepaid Debit Standard – Insurance
MPO	MPO	MasterCard Prepaid Debit Standard – Other
MDS	MPO	MasterCard Prepaid Debit Standard – Other
MDS	MPQ	MasterCard Prepaid Debit Standard – Government Disaster Relief
MPR	MPR	MasterCard Prepaid Debit Standard – Travel
MDS	MPR	MasterCard Prepaid Debit Standard – Travel
MPT	MPT	MasterCard Prepaid Debit Standard – Teen
MDS	MPT	MasterCard Prepaid Debit Standard – Teen
MPV	MPV	MasterCard Prepaid Debit Standard – Government
MPW	MPW	Debit MasterCard Business Card Prepaid Workplace Business to Business
MDS	MPV	MasterCard Prepaid Debit Standard – Government
MPX	MPX	MasterCard Prepaid Debit Standard – Flex Debit
MDs	MPX	MasterCard Prepaid Debit Standard – Flex Benefit
MPY	MPY	MasterCard Prepaid Debit Standard – Employee Incentive
MDS	MPY	MasterCard Prepaid Debit Standard – Employee Incentive
MPZ	MPZ	MasterCard Prepaid Debit Standard – Government Consumer
MDS	MPZ	MasterCard Prepaid Debit Standard – Government Consumer
MDS	MXS	Standard Debit MasterCard Card
MDT	MDT	Commercial Debit MasterCard Card
MEC	MEC	MasterCard Electronic Commercial
MCO	MEC	MasterCard Electronic Commercial
MEF	MEF	MasterCard Electronic Payment Account
MCP	MEF	MasterCard Electronic Payment Account
MFB	MFB	Flex World Elite
MFD	MFD	Flex Platinum
MFE	MFE	Flex Charge World Elite

Code	Sub Code	Description
MFH	MFH	Flex World
MFL	MFL	Flex Charge Platinum
MFW	MFW	Flex Charge World
MGF	MGF	MasterCard Government Commercial Card
MHA	MHA	MasterCard Healthcare Prepaid Non-Tax
MNF	MNF	MasterCard Public Sector Commercial Card
MOC	MOC	Standard Maestro Social
MNW	MNW	MasterCard World Card
MOG	MOG	Maestro Gold Card
MOP	MOP	Maestro Platinum
MPA	MPA	MasterCard Prepaid Debit Standard
MOW	MOW	World Maestro
MPB	MPB	MasterCard Preferred Business Card
MIA	MIA	Prepaid MasterCard Unembossed Student Card
MIP	MIP	Prepaid Debit MasterCard Unembossed Student Card
MPG	MPG	Debit MasterCard Standard Prepaid – General Spend
MPG	MUS	Prepaid Unembossed MasterCard Card
MPH	MPH	MasterCard Cash
MPJ	MPJ	Prepaid Debit MasterCard Card Gold
MCC	MCT	Titanium MasterCard Card
MPL	MPL	Platinum MasterCard Card
MCF	MPK	MasterCard Prepaid Government Commercial Card
MPG	MIA	Prepaid MasterCard Unembossed Student Card
MPK	MPK	MasterCard Prepaid Government Commercial Card
MPG	MFR	MasterCard Commercial Reward Funding
MPG	MIP	Prepaid Debit MasterCard Student Card
MPP	MPP	MasterCard Prepaid Card
MPP	MFR	MasterCard Commercial Reward Funding
MPP	MIP	Prepaid Debit MasterCard Student Card
MPG	MPP	MasterCard Prepaid Card
MRG	MIK	Prepaid MasterCard Electronic Student Card (Non-U.S.)
MRC	MIK	Prepaid MasterCard Electronic Student Card (Non-U.S.)
MRC	MRC	Prepaid MasterCard Electronic
MRF	MRF	Standard Deferred
MRG	MRC	Prepaid MasterCard Electronic Card (Non-U.S.)
MRG	MIL	Prepaid Unembossed MasterCard Student Card (Non-U.S.)
MRG	MRG	MasterCard Prepaid Card (Non-U.S.)

Code	Sub Code	Description
MRG	MRS	Prepaid MasterCard ISIC Student Card
MRJ	MRJ	Prepaid MasterCard Gold Card
MRG	MRJ	Prepaid MasterCard Gold Card
MRH	MRH	MasterCard Platinum Prepaid Travel Card
MRK	MRK	Prepaid MasterCard Public Sector Commercial Card
MRP	MRP	Standard Retailer Centric Payments
MRW	MRK	Prepaid MasterCard Public Sector Commercial Card
MRO	MRO	MasterCard Rewards Only
MRW	MRW	Prepaid MasterCard Business Card (Non-U.S.)
MRG	SUR	Prepaid Unembossed MasterCard Card (Non-U.S.)
MSA	MSA	Prepaid Maestro Payroll Card
MSO	MSA	Prepaid Maestro Payroll Card
MSB	MSB	Maestro Small Business Card
MSF	MSF	Prepaid Maestro Gift Card
MSG	MSG	Prepaid Maestro Consumer Reloadable Card
MSI	MSB	Maestro Small Business Card
MSI	MSI	Maestro Card
MSI	MSS	Maestro Student Card
MSJ	MSJ	Prepaid Maestro Gold
MSM	MSM	Maestro Prepaid Consumer Promotion Card
MSN	MSN	Maestro Prepaid Insurance Card
MSO	MSO	Maestro Prepaid Other Card
MSQ	MSQ	Reserved for Future Use
MSR	MSR	Prepaid Maestro Travel Card
MST	MST	Prepaid Maestro Teen Card
MSV	MSV	Prepaid Maestro Government Benefit Card
MSW	MSW	Prepaid Maestro Corporate Card
MSX	MSX	Prepaid Maestro Flex Benefit Card
MSY	MSY	Prepaid Maestro Employee Incentive Card
MSY	MSZ	Prepaid Maestro Emergency Assistance Card
MTP	MTP	MasterCard Platinum Travel
MWD	MWD	World Deferred
MUW	MUW	MasterCard World Domestic Affluent
MWB	MWB	World MasterCard for Business Card
MWE	MWE	World Elite MasterCard Card
MWR	MWR	World Retailer Centric Payments
MWO	MWO	World Elite MasterCard Corporate Card

Code	Sub Code	Description
OLG	OLB	Maestro Small Business – Delayed Debit
OLP	OLG	Maestro Gold – Delayed Debit
OLS	OLP	Maestro Platinum – Delayed Debit
OLS	OLI	ISIC Maestro Student Card – Delayed Debit
OLS	OLS	Maestro – Delayed Debit
OLW	OLW	World Maestro Delayed Debit
SAG	SAG	Gold MasterCard Salary Incentive – Immediate
SAL	SAL	Platinum MasterCard Salary
SAP	SAP	Platinum MasterCard Salary – Immediate Debit
SAS	SAS	Standard MasterCard Salary – Immediate
SOL	SOL	UK domestic Switch Brand
SOS	SOS	Standard MasterCard Social – Immediate
SWI	SWI	UK Domestic Switch Brand
PMC	PMC	Proprietary Credit Card (Sweden domestic)
PMD	PMD	Proprietary Debit Card (Sweden domestic)
PSC	PSC	Common Proprietary Swedish Credit Card
PSD	PSD	Common Proprietary Swedish Debit Card
PVA	PVA	Private Label A
PVB	PVB	Private Label B
PVC	PVC	Private Label C
PVD	PVD	Private Label D
PVE	PVE	Private Label E
PVF	PVF	Private Label F
PVG	PVG	Private Label G
PVH	PVH	Private Label H
PVI	PVI	Private Label I
PVJ	PVJ	Private Label J
PVL	PVL	Private Label L
TBE	TBE	MasterCard Electronic Business – Immediate Debit
TCB	TCB	MasterCard Business Card – Immediate Debit
TCC	TCC	MasterCard (mixed BIN) – Immediate Debit
TCE	TCE	MasterCard Electronic – Immediate Debit
TCF	TCF	MasterCard Fleet Card – Immediate Debit
TCG	TCG	Gold MasterCard Card – Immediate Debit
TCO	TCO	MasterCard Corporate – Immediate Debit
TCP	TCP	MasterCard Purchasing Card – Immediate Debit
TCS	TCS	MasterCard Standard Card – Immediate Debit

Code	Sub Code	Description
TCW	TCW	World Signia MasterCard Card – Immediate Debit
TCP	TDN	Middle Market MasterCard Purchasing Card – Immediate Debit
TCB	TEB	MasterCard Executive Business Card – Immediate Debit
TEB	TEB	MasterCard Executive Business Card
TEC	TEC	MasterCard Electronic Commercial – Immediate Debit
TCB	TEO	MasterCard Corporate Executive Card – Immediate Debit
TEO	TEO	MasterCard Corporate Executive Card—Immediate Debit
TCE	TIB	ISIC MasterCard Electronic Student Card – Immediate Debit
TCS	TIC	ISIC MasterCard Standard Student Card – Immediate Debit
TCS	TIU	MasterCard Unembossed – Immediate Debit
TCO	TLA	MasterCard Central Travel Solutions Air – Immediate Debit
TNF	TNF	MasterCard Public Sector Commercial Card – Immediate Debit
TNW	TNW	MasterCard New World – Immediate Debit
TPB	TPB	MasterCard Preferred Business Card – Immediate Debit
TCB	TPC	MasterCard Professional Card – Immediate Debit
TPL	TPL	Platinum MasterCard – Immediate Debit
WBE	WBE	World MasterCard Black Edition

Revision History

Date	Author	Version	Description of Change
5th Nov 2013	T O'Shea P Schmitt	1.0	• New Elavon ISO (8583 based) Protocol Specification
12th Nov 2013	P Schmitt	1.1	• Update the length definitions for Dynamic Merchant Data (Payment Facilitator).
13th Dec 2013	P Schmitt	1.2	• Dual Brand Override Indicator added to Field 63
2nd Jan 2014	P Schmitt	1.3	• Changes on Field 41 in relation to alphanumeric TID description. Updated table on page 27 and page 49 in relation to field 38 and 41. Added new Tag to field 63 alphanumeric TID.
13th Feb 2014	P Schmitt	1.4	• Corrected the length definition on field 64 from b64 to b32
20th Feb 2014	P Schmitt	1.5	• Update table 10 for 1814 message type field 41/42 is not send. Field 38 in 1100 is required for incremental pre authorizations. Field 38 description update as well to reflect auth code needs to be send in incremental pre auth requests
2nd Apr 2014	P Schmitt	1.6	• Updated Tag 12 CAVV length definition. Added MasterPass Enabled filed 63 Tag 21 and Digital Wallet data field 63 Tag 22, CAVV length definition changed in field 63 tag 12. Field 44 added to field description.
26th May 2014	P Schmitt	1.6	• Added additional comment from MasterCard for MasterPass wallet data to the table in field 63 Tag 22 description section.
3rd Jun 2014	P Schmitt	1.7	• Corrected the length definitions for field 60 on LLL 3 bytes to 2 bytes BCD, TAG 2 bytes to 1 byte BCD, LENGTH 3 bytes to 2 bytes.

Date	Author	Version	Description of Change
11th Feb 2016	P Hammerson	1.7a	• 1500/1510 Message Description: Updated to include MCC advice. • Field 32: Updated descriptions to clarify need for Acquiring Institution ID to be provided by Elavon. • Addition: Added Appendix A (X25 Communications) and Appendix B (MAC Generation and Validation). • Field 63, Tags 04, 11, 12 and 13: Updated descriptions to clarify 3D Secure requirements. • Reversal Message Format and Usage: Updated description to clarify Field 48 requirements. • Field 48: Updated table and description to clarify Pre-Authorisation Reversal requirements. • Summary of Field Usage Chart: Updated Field 63 requirements for Reversal Response Messages. • Field 22: Updated description to clarify Unattended Indicator requirements.
15th Feb 2016	P Hammerson	1.8	• Field 63 (Reserved Private Data): Added Tag 23 (UCAF Collection Indicator) values and description. • Field 63 (Reserved Private Data): Added Tag 24 (MasterCard Assigned ID) values and description.
23rd Mar 2016	P Hammerson	1.8a	• Field 63 (Reserved Private Data III), Tag 11 (Transaction Identifier) - added American Express Safekey information to the Description Table and Breakdown. • Field 63 (Reserved Private Data III), Tag 12 (Visa/American Express Authentication Verification Value) Field – added American Express Safekey information to the Description Table and Breakdown.

Date	Author	Version	Description of Change
30th Jun 2016	P Hammerson	1.8b	• Important Message Fields – updated value for Field 48, Tag 01 (Item Number) • Reversal Message Format and Usage – minor edits for clarity. • 1420 / 1421 Reversal Request – correction to the description for Field 3 (Processing Code). • Field 4 (Transaction Amount) – minor edits for clarity. • Field 39 (Response Code) – addition of new Actions Codes; 138, 139, 140 and related comment. • Field 48 (Additional Private Data) – addition of comment re: Section 4 (Important Message Fields). • Field 55 (ICC Data) – updated Tag 84 (AID/Dedicated Filename) from Conditional to Mandatory. • Field 55 (ICC Data) – addition of Tag 9F6E (Form Factor Indicator / Third Party Data).
11th Aug 2016	P Hammerson	1.8c	• Field 22 (POS Data Code) – new value A (Credential on File Transaction) • Field 55 (ICC Data) – Tag 84 set as Mandatory, updated description. • Field 63 (Reserved Private Data III), Tag 23 (UCAF Collection Indicator – updated description for value 1 (Merchant Participates / Attempted UCAF) and value 2 (Merchant Participates / UCAF Present)
23rd Sep 2016	P Hammerson	1.8d	• Variable Length Data Fields: Removed duplicate paragraph. • Summary of Field Usage – Extended/Secondary Bitmap: Updated field name to match descriptions elsewhere in the document. • Field Description – Message Type Indicator (MTI): Added new description for this pre-existing field. • Field Description – Primary and Secondary Bitmaps: Updated field descriptions and added example bitmap. • Field Description – ICC Data: Terminal Capabilities, Cardholder Verification Results and PAN Sequence Number requirement changed from Optional to Mandatory. • Field Description – POS Entry Code: Credential On File Transaction value changed to Reserved For Future Use. • Field Description – Transaction Amount: Removed comment re: zero amount auth support.

Date	Author	Version	Description of Change
31st Jan 2017	P Hammerson	1.09	• Summary of Field Usage – Field 43: Updated Field Name. • Field Descriptions – Field 43: Updated Field Name and table to include Payment Facilitator values. • Field Descriptions – Field 63: Added Tag 25 (Unique Transaction Reference Number) / Added Tag 26 (Payment Facilitator Additional Information) • Field Descriptions - Field 22, Byte 7: new value 8 added (In-App Ecommerce). • Field Descriptions – Message Length Field: Added description for Message Length field. • Revision History – Version 1.7a update: Corrected number of updated field from 64 to 63 for 3D Secure updates. • Field Descriptions - Field 60, Tag 01: Updated Tag description. • 1210 Sale/Completion Response Message: Updated comments to reference 1100 and 1200 messages. • Field Descriptions: Field 63, Tag 05: Updated description. • Field Descriptions: Field 63, Tag 20: Updated description. • 1100 Pre-Authorisation Request, PIN Data Field – removed references to obsolete values. • 1200 / 1210 Sale / Completions, PIN Data Field – removed references to obsolete values. • 1430 Reversal Response Message, Field 63: added field to message.

Date	Author	Version	Description of Change
25th Jul 2017	P Hammerson	1.10	• Supported Transactions: updated description (DCC Inquiry Request) • New Message: added DCC Inquiry Request message. • New Message: added DCC Inquiry Response message. • Field Descriptions – Field 22, Byte 7: added new value B (PAN Auto Entry via Server) • Field Descriptions – Field 55: added new EMV Tag 9F7C. • Field Descriptions - Field 63, Tag 17: updated description (DCC Inquiry Request). • Field Descriptions – Field 63, Tag 18: updated description (DCC Inquiry Request). • Field Descriptions – Field 63: added new Tag 27 (DCC Reference Number). • Field Descriptions – Field 63: added new Tag 28 (Transit Transaction Data). • Field Descriptions – Field 63: added new Tag 29 (PAN Association Data). • New Appendix: added Appendix C (Product Codes) • Field Descriptions – Field 63: added comments re: Tag 15 (Acceptance Indicator for Card Scheme Data), Tag 16 (Card Scheme Data) and Tag 25 (Unique Transaction Reference Number).
25th Aug 2017	P Hammerson	1.10a	• 1305 / 1315 Messages – DCC Inquiry Request: added Field 60 (Reserved Private Data).
26th Sep 2017	P Hammerson	1.10b	• Field Descriptions – Field 63: updated description for Tag 14 (Financial Institution Data). • Field Descriptions - Bitmap Primary Field: updated description, removed reference to position of bytes in Host. Field Descriptions - Bitmap Secondary: updated description, removed reference to position of bytes in Host.

Date	Author	Version	Description of Change
17th Apr 2018	P Hammerson	2.0	• Field Descriptions – Field 4 (Transaction Amount): updated description to add Account Status Check. • Field Descriptions - Field 63 (Reserved Private Data III), Tag 11 (Transaction Identifier): updated description to add TAVV. • Introduction – Supported Transactions: added comment re: incremental transactions. • Field Descriptions – Field 55 (ICC Data): updated description to add comment re: Amex ARC requirements. • Field Descriptions – Field 22 (POS Data Code): updated value A to indicate Credential on File. • Field Descriptions – Field 63 (Reserved Private Data III): added new fields (Credential on File Indicator, Merchant Initiated Transaction Indicator and Debt Repayment Indicator). • Field Descriptions – Field 63 (Reserved Private Data III), Tag 14 (Financial Institution Data): updated description to include MCC 6050. • Field Descriptions - Field 60 (Reserved Private Data), Tag 01 (Application ID): updated description of Position 1-2 (Protocol Version Number). • Field Descriptions - Field 63 (Reserved Private Data III), Tag 12 (Visa/American Express Authentication Verification Value): updated description. • Field Descriptions – Field 55 (ICC Data), Tag 9F6E: added support of Diners Form Factor Indictor. • Field Descriptions – Field 63 (Reserved Private Data III), Tag 12 (3D Secure CAVV/AEVV): added support of Diners ProtectBuy. • Message Formats: changed name of Field 29 from Reconciliation Indicator to Reconciliation Number to match Field Description definition. • Field Descriptions – Field 63 (Reserved Private Data III), Tag 25 (unique Transaction Response Reference Number): updated description. • Field Descriptions – Field 48 (Additional Private Data), Tag 004 (Elavon RRN): updated tag format from numeric to alphanumeric.

Date	Author	Version	Description of Change
20th Jul 2018	P Hammerson	2.01	• Field 39: updated Field Name from Action Code to Response Code throughout document. • Field Descriptions – Field 22 (POS Data Code): updated description. • Field Descriptions – Field 63 (Reserved Private Data III), Tag 12 (3D Secure CAVV): updated description. • Field Descriptions – Field 11 (STAN): updated description. • Field Descriptions – Field 22 (POS Data Code): updated description for Byte 7, value A (Credential on File) to support MasterCard. • Field 63 (Reserved Private Data III) – Tag 13 (Universal Cardholder Authentication Field): updated description. • Field 63 (Reserved Private Data III) – Tag 30 (Credential on File Indicator): updated description to support MasterCard.