

Annex E (normative)

Message class definitions

General

Every message begins with a three-position message type identifier. The first position of the message type identifier is the message class. Each value of the message class supports a particular activity, e.g. 1 for authorizations. The second position (message function) and third position (transaction originator) of the message type identifier give further information about the message class. For clarity, each message class is described separately so that all relevant aspects can be found in one place.

Some activities (e.g. batch or file transfer) require the co-ordinated use of more than one message class. The relevant inter-message class rules are described in separate sections, which are in addition to the individual message class descriptions.

Mandatory and conditional data elements

The specific conditions applicable to each data element vary by message class definition. The following table contains the definitions of each of the condition codes specified in the mandatory and conditional data element clause in each message class definition.

- a) “M” (mandatory) signifies that the data element is required in that message. “ME” (mandatory echo) signifies the contents shall be returned unaltered in a response message.
- b) If the condition identified in Table E.1 applies, then the data element shall be present, otherwise its inclusion in a message is subject to bilateral agreement.

Table E.1 — Data element condition codes

Code	Condition
—	Optional.
M	Mandatory.
ME	Mandatory echo. Shall echo the same data as the original message.
00	Reserved for ISO use.
01	Mandatory if fees affect reconciliation.
02	Mandatory if information is available and not read electronically from the card, e.g. manual card entry.
03	Mandatory, shall contain the same data as the original authorization (1xx) or financial presentment (2xx) message.
04	Mandatory if Amount cardholder billing or Amount cardholder billing fee is present.

05	Mandatory when the reconciliation and transaction currencies differ and this data element were not provided in the request or advice message.
06	Mandatory if track data is captured at the POS.
07	Mandatory if the PAN conforms to ISO 7812.
08	Mandatory in a replacement, previously authorised, retrieval, representment, partial reversal or partial chargeback. Mandatory in a supplementary authorization, if available.
09	Reserved for ISO use.
10	Mandatory when the forwarding institution is not the same as the institution originating the message.
11	Reserved for ISO use.
12	Mandatory if transaction affects reconciliation and this data element was not provided in the request or advice message.
13	Mandatory if the reconciliation is not in balance. Contains the value calculated by the institution sending the reconciliation advice response.
14	Mandatory if the transaction affects reconciliation and checkpoint reconciliation is used and this data element was not provided in the request or advice message.
15	Mandatory if available.
16	Mandatory in a response message if the data element was present in the original request or advice message. If present, it shall contain the same data as the original message.
17	Mandatory in the advice/notification if the data element was present in the original authorization/financial presentment request/advice notification message. If present, it shall contain the same data as the original message.
18	Mandatory if the approval code is required to be less than six characters.
19	Mandatory when the receiving institution is not the same as the final destination of the message.
20	Mandatory when the institution that processed (approved or denied) an authorization or financial presentment is not the same institution identified in the PAN.
21	Mandatory if a partial approval, declined or rejected transaction.
22	Mandatory if different from Date and time local transaction.
23	Mandatory if transaction affects reconciliation and checkpoint reconciliation used.
24	Mandatory if this message is used for cutover or checkpoint reconciliation.
25	Mandatory if this message is used for checkpoint reconciliation.
26	Mandatory for all processing codes except for inquiry services, i.e. processing code 3xxx.
27	Mandatory, shall echo the first two positions of the processing code in the original message.
28	Mandatory if function code indicates card administration.
29	Mandatory if function code is other than card administration.
30	Mandatory in real time transactions.
31	Mandatory if approved.

32	Mandatory if batch/file transfer control data elements do not uniquely identify the file to be loaded.
33	Mandatory once assigned, in all subsequent messages in this transaction (e.g. responses, acknowledgements, advices, notifications and instructions) and all messages in related transactions (e.g. financial presentments, chargebacks, reversals and retrievals). Shall contain the same value as original assigned.
34	Mandatory if fee collection is relevant to the life cycle of the transaction.
35	Mandatory in a network management message when Function code indicates a key is being delivered and Encryption data is not present.
36	Mandatory in request response/advice response messages if the receiver detects an error in the request/repeat or advice/repeat messages.
37	Mandatory in the error notification message if present in the messages that contained the error condition, if the receiver can parse that message.
38	Mandatory in network management messages that denotes the start or end of a file transfer.
39	Mandatory in messages which are submitted as part of a batch or file transfer.
40	Mandatory in retrieval, chargeback and fee collection messages if provided in an original financial presentment. Shall contain the same values as used in the original transaction.
41	Mandatory if Function code is not 650 or 651.
42	Mandatory when the transaction is an accumulation transaction and the value applies to all transactions within the accumulated total.
43	Mandatory if Function code is 111.
44	Mandatory if involves PAN.
45	Mandatory if Function code is 109, 110, 112, or 113.
46	Mandatory if Encryption data is not present.
47	Mandatory if Security related information and Key management data are not present.
48	Mandatory when the function code indicates a key is being delivered and Key management data is not present.
49	Mandatory when PAN is not present or when the Receiving institution identification code is not the same as the final destination of the message.

Message flows

Message flow diagrams are included with the description of each message class to show the relationships between messages. The following symbols (Figure E.1) are used in all message flow diagrams:

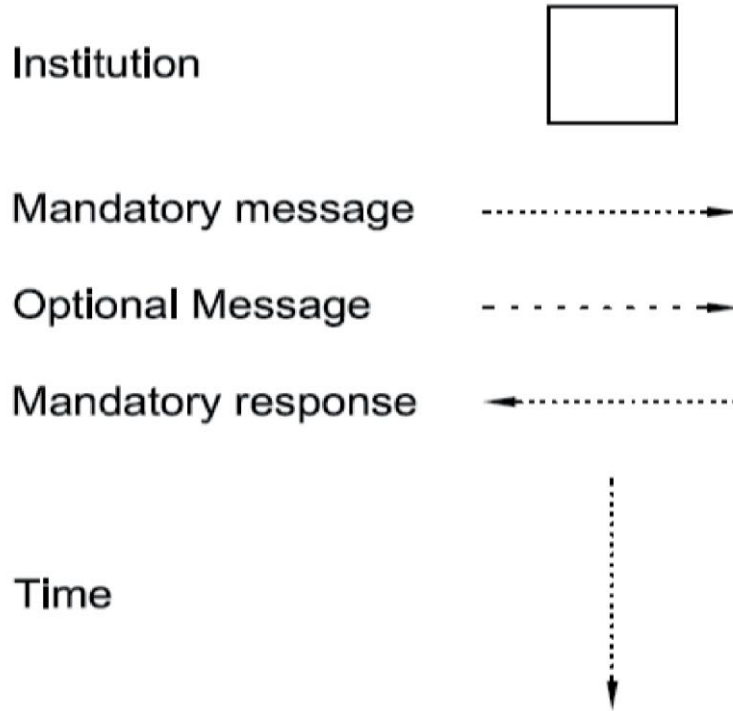


Figure E.1 — Message flow symbols

Exception message flows

If the original request/repeat sequence is not responded to for whatever reason, the sender of the request/repeat shall send a reversal.

If the acquirer gets no response to a 100 or 200 message and stands in for the card issuer, any resulting 110 or 220 advice shall follow the reversal transaction. If a late response is received, the acquirer shall ignore it because a reversal transaction (and possibly an advice) has been sent. Figure E.2 shows the exception message flows.

There are no repeats or reversals for notification or instruction messages.

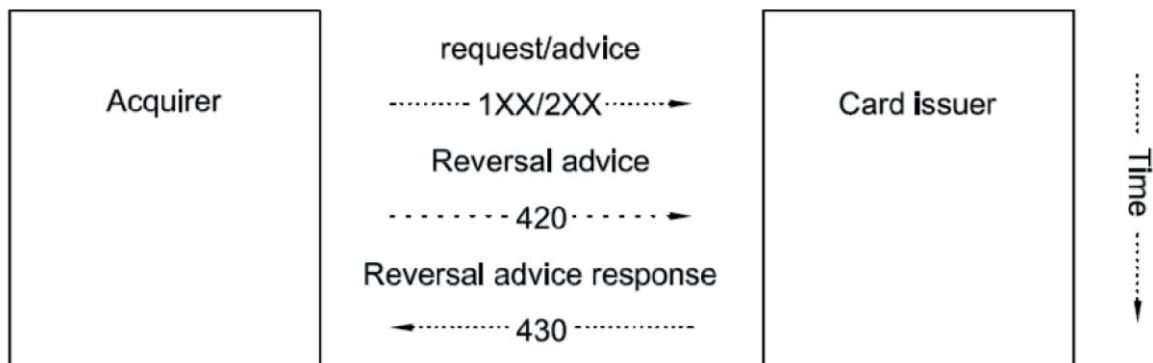


Figure E.2 — Exception message flows

Authorization message class

Authorization description

An authorization is an approval or guarantee of funds given by the card issuer to the acquirer. The acquirer seeks authorization from the card issuer or advises the card issuer of authorization already given, by means of the authorization message class. An authorization is not intended to permit the application of the approved transaction amount to the cardholder's account for billing or posting.

- a) The following types of authorizations are defined:
 - 1) original authorization, i.e. the first or only authorization;
 - 2) replacement authorization, i.e. when a previous authorization was approved and a subsequent authorization is required to replace the previously authorised amount because the amount of the transaction is now greater or less;
 - 3) resubmission authorization, i.e. to re-enter a previous authorization that was denied or rejected;
 - 4) supplementary authorization, i.e. when one or more previous authorizations were approved and a further authorization is required for an additional amount.
- b) The following types of authorization decisions are defined:
 - 1) full approval, i.e. where the card issuer indicates approval of the requested amount;
 - 2) partial approval, i.e. where the card issuer indicates approval of an amount less than the originally requested amount;
 - 3) declined or rejected, i.e. where the request for approval is declined or the authorization request or advice message is rejected.
- c) The Function code data element shall be used to indicate the type of authorization required and whether the Amount transaction is accurate or estimated. If the final amount is available, the Amount transaction shall be an accurate amount. If the final amount cannot be determined until later, the Amount transaction shall be an estimated amount.

Authorization message rules

The following applies to all authorization messages.

- a) An authorization request message (100/101) shall be used when the process cannot complete at the POS until the authorization response message (110) is received indicating the action to be taken. The use of an authorization request message does not imply that the cardholder is present, e.g. telephone or mail order.

- b) An authorization request response message (110) shall be sent in response to an authorization request message (100/101). It indicates the approval or guarantee of funds or the action to be taken as specified in the Action code data element.
- c) An authorization advice message (120/121) shall be used to inform the card issuer of an authorization that has completed at the POS.
- d) An authorization advice response message (130) shall be sent in response to an authorization advice message (120/121). An authorization advice response message (130) indicates if the card issuer accepts or rejects the transfer of financial liability.
- e) An authorization notification message (140) shall be used to inform the card issuer of an authorization that has completed at the POS. The acquirer can periodically specify (in Batch/file transfer message control) that the card issuer acknowledges the receipt of the most recently sent group of notification messages.
- f) An authorization notification acknowledgement message (150) shall be sent in response to an authorization notification message (140) only if the authorization notification message (140) indicated (in Batch/file transfer message control) that an acknowledgement was required. The authorization notification acknowledgement message (150) indicates that a certain number of preceding notification messages were received.

The following table identifies the usage of Amount transaction and Original amount transaction within these authorization message types.

Table E.2 — Amounts in types of authorization messages

In request, advice and notification messages			
Authorization type	Function code	Amount transaction	Original amount transaction
Original	100,101	Transaction amount	—
Replacement	102,103	New amount	Originally authorised amount
Resubmission	104,105	Transaction amount	—
Supplementary	106,107	Additional amount	Sum of previous approvals, if available
Inquiry	108	—	—
Verification	109, 110, 111, 112, 113	—	—
In response messages			
Authorization type	Function code	Amount transaction	Original amount transaction
Full approval	—	Transaction amount	—
Partial approval	—	Approved amount	Originally requested amount
Decline/reject	—	Zero	Originally requested amount

Authorization message type identifiers

The following table defines the message type identifiers that may be used in an authorization transaction.

Table E.3 — Authorization message type identifiers

MTI	Message	Purpose	From	To	Usage
100	Authorization request	Requests an authorization	Acquirer	Card issuer	
101	Authorization request repeat				
110	Authorization request response	Carries the answer to an authorization request message	Card issuer	Acquirer	Shall be sent in response to a 100 or a 101
120	Authorization advice	Advises of an authorization carried out on behalf of the card issuer	Acquirer	Card issuer	
121	Authorization advice repeat				
130	Authorization advice response	Carries the answer to an authorization advice message	Card issuer	Acquirer	Shall be sent in response to a 120 or a 121
140	Authorization notification	Notifies of an authorization action	Acquirer	Card issuer	
150	Authorization notification acknowledgement	Acknowledges receipt of one or more authorization notification messages	Card issuer	Acquirer	Shall be sent in response to a 140 if Batch/file transfer message control requests acknowledgement

Authorization mandatory and conditional data elements

Table E.4 lists the mandatory and conditional data elements used in authorization messages. The condition codes are defined in Table E.1.

Table E.4 — Authorization mandatory and conditional data elements

Bit	Authorization messages	Message type identifiers					
	Data element name	100 101	110	120 121	130	140	150
1	(see 4.3 for usage)						
2	Primary account number	07	16	07	16	07	
3	Processing code	M	27	M	27	M	
4	Amount transaction	26	26	26	26	26	
7	Date and time transmission	30	30	30	30	30	

11	Systems trace audit number	M	ME	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME	M	
13	Date effective	02		02		02	
14	Date expiration	02		02		02	
18	Message error indicator		36		36		
21	Transaction life cycle identification data	33	33	33	33	33	33
22	Point of service data code	M		M		M	
23	Card sequence number	02		02		02	
24	Function code	M		M		M	
25	Message reason code			M		M	
26	Merchant category code	M		M		M	
27	Point of service capability	18					
28	Date reconciliation		12		12	12	
29	Reconciliation indicator		14		14	23	
30	Amounts original	08	21	08		08	
32	Acquiring institution identification code	M	ME	M	ME	M	
33	Forwarding institution identification code	10	10	10	10	10	
35	Track 2 data	06		06		06	
36	Track 3 data	06		06		06	
38	Approval code		31		31	31	
39	Action code		M	M	M	M	
40	Service code	02		02		02	
41	Card acceptor terminal identification	15	16	15	16	15	
42	Card acceptor identification code	15	16	15	16	15	
45	Track 1 data	06		06		06	
46	Amounts fees	01	01	01	01	01	
58	Authorizing agent institution identification code		20	20		20	
59	Transport data		16		16		
68	Batch/file transfer message control					39	39
100	Receiving institution identification code	19	19	19	19	19	

Authorization message flows

Figure E.3 shows the sequence of messages that may flow in an authorization transaction.

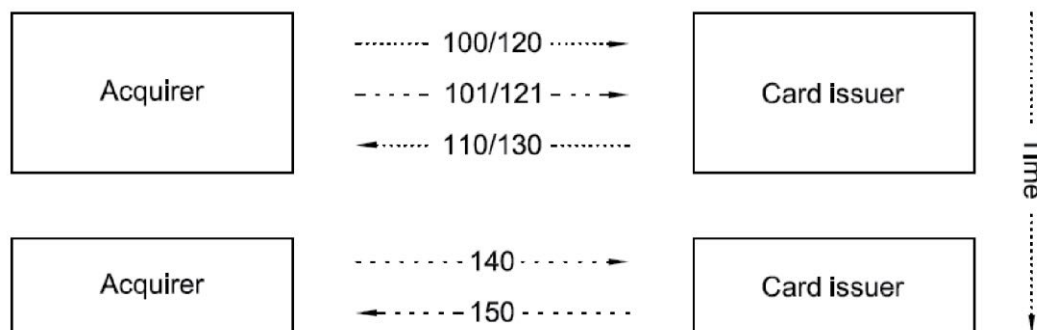


Figure E.3 — Authorization message flow

Verification message class

Verification description

Verification messages use the request/response, advice/response and notification/acknowledgement messages from the authorization message class.

Verification messages may be used to request verification or authentication. This message class may be used for authentication of certificates, certificate management, address verification, cash transactions, cheque verification or any other transactions that do not require a subsequent financial presentment message to complete the transaction.

- a) The following types of verification are defined:
 - 1) address verification for billing address;
 - 2) address verification for ship to address;
 - 3) certificate data verification;
 - 4) cheque verification;
 - 5) account verification.
- b) The Function code shall be used to indicate the type of verification and which data elements are required.
- c) The results of the verification will be returned in the Action code.

Verification message rules

The following applies to all verification messages:

- a) An authorization request message (104/105) shall be used when a party needs information/verification/ authentication.
- b) An authorization request response message (114) shall be sent in response to an authorization request message (104/105). It indicates the approval or the action to be taken as specified in the Action code data element.
- c) An authorization advice message (124/125) shall be used to inform the receiver of a verification that has been completed on its behalf. Message reason codes are used to indicate the reason for an advice message (see D.16).
- d) An authorization advice response message (134) shall be sent in response to an authorization advice message (124/125). An authorization advice response message (134) indicates if the receiver accepts or rejects the verification advice transaction.
- e) An authorization notification message (144) shall be used to inform the receiver of a verification that has been completed on its behalf.
- f) An authorization notification acknowledgement message (154) shall be sent in response to an authorization notification message (144) only if the authorization notification message (144) indicated (in Batch/file transfer message control) that an acknowledgement was required. The authorization notification acknowledgement message (154) indicates that a certain number of preceding notification messages were received.

The Amount transaction data element shall not contain a value of zero. If there is no amount for a specific transaction, the Amount transaction data element shall not be present in a message.

Verification message type identifiers

The following table defines the message type identifiers, which may be used in a verification transaction.

Table E.5 — Verification message type identifiers

MTI	Message	Purpose	From	To	Usage
104	Authorization request	Request for a verification	Sender	Receiver	
105	Authorization request repeat		Sender	Receiver	
114	Authorization request response	Carries the answer to a verification authorization request	Receiver	Sender	Shall be sent in response to a 104 or a 105
124	Authorization advice	Advises of a verification carried out on behalf of the receiver	Sender	Receiver	
125	Authorization advice repeat		Sender	Receiver	

134	Authorization advice response	Carries the answer to a verification authorization advice	Receiver	Sender	Shall be sent in response to a 124 or a 125
144	Authorization notification	Notifies of a verification action carried out on behalf of the receiver	Sender	Receiver	
154	Authorization notification acknowledgement	Acknowledges receipt of a verification notification	Receiver	Sender	Shall be sent in response to a 144 if Batch/file transfer message control requests acknowledgement

Verification mandatory and conditional data elements

Table E.6 lists the mandatory and conditional data elements used in verification messages. The condition codes are defined in Table E.1.

Table E.6 — Verification mandatory and conditional data elements

Bit	Authorization messages	Message type identifiers					
	Data element name	104 105	114	124 125	134	144	154
1	(see 4.3 for usage)						
2	Primary account number	44	16	44	16	44	
3	Processing code	M	ME	M	ME	M	
7	Date and time transmission	30	30	30	30	30	
11	Systems trace audit number	M	ME	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME	M	
13	Date effective	02		02		02	
14	Date expiration	02		02		02	
18	Message error indicator		36		36		
21	Transaction life cycle identification data	33	33	33	33	33	33
24	Function code	M		M		M	
25	Message reason code			M		M	
27	Point of service capability	18					
33	Forwarding institution identification code	10	10	10	10	10	
34	Acceptance Environment Data	43		43		43	
38	Approval code		31		31	31	
39	Action code		M	M	M	M	
41	Card acceptor terminal identification	15	16	15	16	15	

42	Card acceptor identification code	15	16	15	16	15	
49	Verification data	45		45		45	
58	Authorizing agent institution identification code		20	20		20	
59	Transport data		16		16		
68	Batch/file transfer message control					39	39
93	Transaction destination identification code	M	ME	M	ME	M	
94	Transaction originator identification code	M	ME	M	ME	M	
100	Receiving institution identification code	19	19	19	19	19	

Verification message flows

Figure E.4 shows the sequence of messages that may flow in support of a verification transaction.

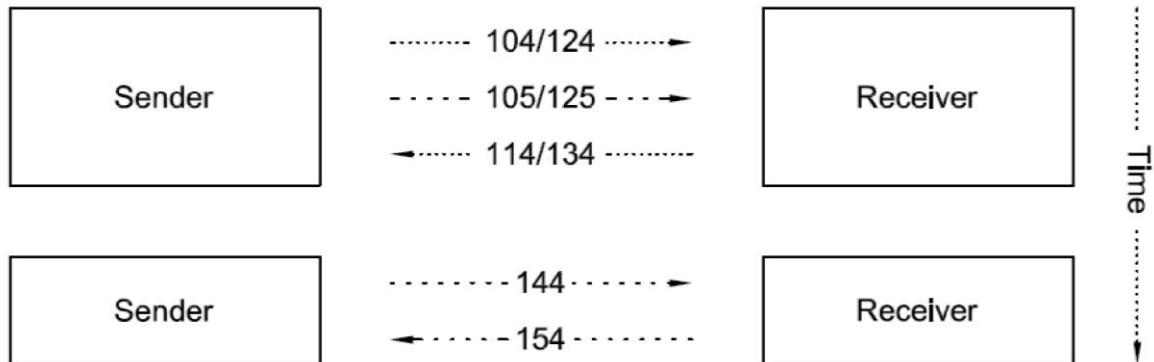


Figure E.4 — Verification message flow

Financial presentment message class

Financial presentment description

A financial presentment permits the application of the approved transaction amount to the cardholder's account for billing or posting.

- a) The following types of financial presentment are defined:
 - 1) first, i.e. original or only financial presentment;
 - 2) previously authorised, i.e. when an authorization was previously given ;
 - 3) resubmission, i.e. to re-enter a previous financial presentment that was denied or rejected;

- 4) Representment, i.e. to partially, or to wholly, recover funds previously charged back by the card issuer.
- b) The following types of financial presentment decisions are defined:
 - 1) full approval, i.e. where the response from the card issuer indicates approval of the originally requested amount;
 - 2) partial approval, i.e. where the card issuer indicates approval of an amount less than the originally requested amount;
 - 3) declined or rejected, i.e. where the request for approval is declined or the financial presentment request or advice message is rejected
 - c) The Function code shall be used to indicate the type of financial presentment and whether the Amount transaction is the same or different from any previously authorised amount.

Financial presentment message rules

The following applies to all financial presentment messages.

- a) A financial presentment request message (200/201) shall be used when the process cannot complete at the POS until the response message is received indicating the action to be taken. The use of a financial presentment request message (200) does not imply that the cardholder is present, e.g. telephone or mail order.
- b) A financial presentment request response message (210) shall be sent in response to a financial presentment request message (200/201). A financial presentment request response message (210) indicates the approval or guarantee of funds or the action to be taken as specified in the Action code data element.
- c) A financial presentment advice message (220/221) shall be used to inform the card issuer of a financial presentment that has completed at the POS.
- d) A financial presentment advice response message (230) shall be sent in response to a financial presentment advice message (220/221). A financial presentment advice response message (230) indicates if the card issuer accepts or rejects the transfer of financial liability.
- e) A financial presentment notification message (240) shall be used to inform the card issuer of a financial presentment that has completed at the POS. The acquirer can periodically specify (in Batch/file transfer message control) that the card issuer acknowledges the receipt of the most recently sent group of notification messages.
- f) A financial presentment notification acknowledgement message (250) shall be sent in response to a financial presentment notification message (240) only if the financial presentment notification message indicated (in Batch/file transfer message control) that an acknowledgement was required. The financial presentment notification acknowledgement message (250) indicates that a certain number of preceding notification messages were received.

Table E.7 identifies the usage of Amount transaction and Original amount transaction within these financial presentment message types.

Table E.7 — Amounts in types of financial presentment transaction messages

Financial presentment type	Function code	Amount transaction	Original amount transaction
In request, advice and notification messages			
Original	200, 209	Transaction amount	—
Previously authorised	201, 202	New amount	Originally authorised amount
Resubmission	203, 204, 209, 210	Transaction amount	—
Representment	205, 206, 207, 208, 209, 211, 212, 213, 214	Representment amount	Amount of chargeback
Accumulation	215, 216, 217	Accumulated amount	—
In response messages			
Full approval	—	Transaction amount	—
Partial approval	—	Approved amount	Originally requested amount
Decline/reject	—	Zero	Originally requested amount

Financial presentment message type identifiers

Table E.8 defines the message type identifiers that may be used in a financial presentment transaction.

Table E.8 — Financial presentment message type identifiers

MTI	Message	Purpose	From	To	Usage
200	Financial presentment request	Requests approval for a financial presentment transaction	Acquirer	Card issuer	
201	Financial presentment request repeat				
210	Financial presentment request response	Carries the answer to a financial presentment request message	Card issuer	Acquirer	Shall be sent in response to a 200 or a 201
220	Financial presentment advice	Advises of a financial presentment transaction carried out on behalf of the card issuer	Acquirer	Card issuer	

221	Financial presentment advice repeat				
230	Financial presentment advice response	Carries the answer to a financial presentment advice message	Card issuer	Acquirer	Shall be sent in response to a 220 or a 221
240	Financial presentment notification	Notifies of a financial presentment transaction carried out on behalf of the card issuer	Acquirer	Card issuer	
250	Financial presentment notification acknowledgement	Acknowledges receipt of one or more financial presentment notification messages	Card issuer	Acquirer	Shall be sent in response to a 240 if Batch/file transfer message control requested acknowledgement

Financial presentment mandatory and conditional data elements

Table E.9 lists the mandatory and conditional data elements used in financial presentment messages. The condition codes are defined in Table E.1.

Table E.9 — Financial presentment mandatory and conditional data elements

Financial presentment messages		Message type identifiers					
Bit	Data element name	200 201	210	220 221	230	240	250
1	(see 4.3 for usage)						
2	Primary account number	07	16	07	16	07	
3	Processing code	M	27	M	ME	M	
4	Amount transaction	M	M	M	M	M	
5	Amount reconciliation		05		05	05	
7	Date and time transmission	30	30	30	30	30	
9	Conversion rate reconciliation		05		05	05	
10	Conversion rate cardholder billing	04	04	04	04	04	
11	Systems trace audit number	M	ME	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME	M	
13	Date effective	02		02		02	
14	Date expiration	02		02		02	
16	Date conversion		05		05	05	
17	Date capture			22		22	
18	Message error indicator		36		36		

21	Transaction life cycle identification data		33	33	33	33	33	33
22	Point of service data code		M		M		M	
23	Card sequence number		02		02		02	
24	Function code		M		M		M	
25	Message reason code				M		M	
26	Merchant category code		M		M		M	
27	Point of service capability		18					
28	Date reconciliation			12		12	12	
29	Reconciliation indicator			14		14	23	
30	Amounts original		08	21	08		08	
32	Acquiring institution identification code		M	ME	M	ME	M	
33	Forwarding institution identification code		10	10	10	10	10	
35	Track 2 data		06		06		06	
36	Track 3 data		06		06		06	
38	Approval code			31	31		31	
39	Action code			M	M	M	M	
40	Service code		02		02		02	
41	Card acceptor terminal identification		15	16	15	16	15	
42	Card acceptor identification code		15	16	15	16	15	
43	Card acceptor name/location		M		M		M	
43	01-80 / 71.2	Card acceptor name	M		M		M	
43	01-85 / 71.7	Card acceptor country code	M		M		M	
45	Track 1 data		06		06		06	
46	Amounts fees		01	01	01	01	01	
58	Authorizing agent institution identification code			20	20		20	
59	Transport data			16		16		
68	Batch/file transfer message control						39	39
100	Receiving institution identification code		19	19	19	19	19	

Financial presentment message flows

Figure E.5 shows the sequence of messages that may flow in support of a financial presentment transaction.

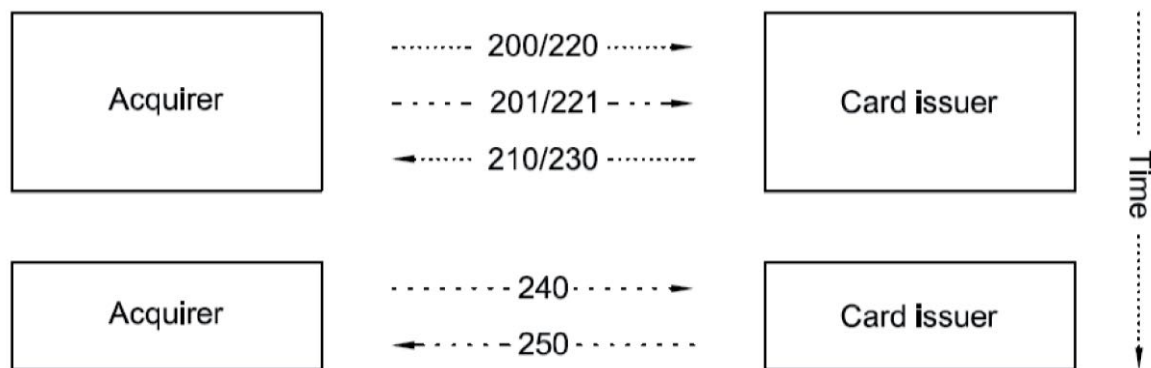


Figure E.5 — Financial presentment message flow

Financial accumulation presentment

Financial accumulation presentment description

A financial accumulation presentment permits the application of the approved transaction amount to a specific account for billing or posting.

- a) The following types of financial accumulation presentment are defined:
- b) The Function code shall be used to indicate the type of financial accumulation presentment.

Financial accumulation presentment message rules

Financial accumulation presentment uses the advice/response and notification/acknowledgement messages from the financial presentment message class.

The following applies to financial presentment messages when used for financial accumulation presentment.

- a) A financial presentment advice message (220/221) shall be used to inform the card issuer of a financial accumulation presentment that has completed at the POS.
- b) A financial presentment advice response message (230) shall be sent in response to a financial presentment advice message (220/221). A financial presentment advice response message (230) indicates if the card issuer accepts or rejects the transfer of financial liability.
- c) A financial presentment notification message (240) shall be used to inform the card issuer of a financial accumulation presentment that has completed at the POS. The acquirer can periodically specify (in Batch/file transfer message control) that the card issuer acknowledges the receipt of the most recently sent group of notification messages.
- d) A financial presentment notification acknowledgement message (250) shall be sent in response to a financial presentment notification message (240) only if the financial presentment notification message (240) indicated (in Batch/file transfer message control) that an

acknowledgement was required. The financial presentment notification acknowledgement message (250) indicates that a certain number of preceding notification messages were received.

- e) Financial presentment messages can apply both for several transactions to a single cardholder or several transactions from many cardholders to a single card issuer with a pooled funds account.

Financial accumulation presentment message type identifiers

Table E.10 defines the financial presentment message type identifiers that may be used in support of a financial accumulation presentment transaction.

Table E.10 — Financial accumulation presentment message type identifiers

MTI	Message	Purpose	From	To	Usage
220	Financial presentment advice	Advises of a financial accumulation presentment carried out on behalf of the card issuer	Acquirer	Card issuer	
221	Financial presentment advice repeat				
230	Financial presentment advice response	Carries the answer to a financial presentment advice message	Card issuer	Acquirer	Shall be sent in response to a 220 or a 221
240	Financial presentment notification	Notifies of a financial accumulation presentment carried out on behalf of the card issuer	Acquirer	Card issuer	
250	Financial presentment notification acknowledgement	Acknowledges receipt of one or more financial presentment notification messages	Card issuer	Acquirer	Shall be sent in response to a 240 if Batch/file transfer message control requested acknowledgement

Financial accumulation presentment mandatory and conditional data elements

Figure E.10 lists the mandatory and conditional data elements used in financial accumulation presentment messages when used in support of a financial accumulation presentment. The condition codes are defined in Table E.1.

In accumulation messages, the PAN may contain the card issuer's institution identification number only (shall conform with ISO 7812-1).

Table E.11 — Financial accumulation presentment mandatory and conditional data elements

Financial presentment messages		Message type identifiers				
Bit	Data element name	220	221	230	240	250

1	(see 4.3 for usage)					
2	Primary account number		07	16	07	
3	Processing code		M	ME	M	
4	Amount transaction		M	M	M	
5	Amount reconciliation			05	05	
7	Date and time transmission		30	30	30	
9	Conversion rate reconciliation			05	05	
11	Systems trace audit number		M	ME	M	ME
12	Date and time local transaction		M	ME	M	
16	Date conversion			05	05	
18	Message error indicator			36		
21	Transaction life cycle identification data		33	33	33	33
22	Point of service data code		42		42	
24	Function code		M		M	
25	Message reason code		M		M	
26	Merchant category code		42		42	
28	Date reconciliation			12	12	
29	Reconciliation indicator			14	23	
32	Acquiring institution identification code			16	M	
33	Forwarding institution identification code		10	10	10	
37	Retrieval reference number			16		
39	Action code		M	M	M	
41	Card acceptor terminal identification		42	16	42	
42	Card acceptor identification code		42	16	42	
43	Card acceptor name/location		42		42	
43	01-80 / 71.2	Card acceptor name	M		M	
43	01-85 / 71.7	Card acceptor country code	M		M	
46	Amounts fees		01	01	01	
58	Authorizing agent institution identification code		20		20	
59	Transport data			16		
68	Batch/file transfer message control				39	39
100	Receiving institution identification code		19	19	19	

Financial accumulation presentment message flows

Figure E.6 shows the sequence of financial presentment messages that may flow in support of a financial accumulation presentment transaction.

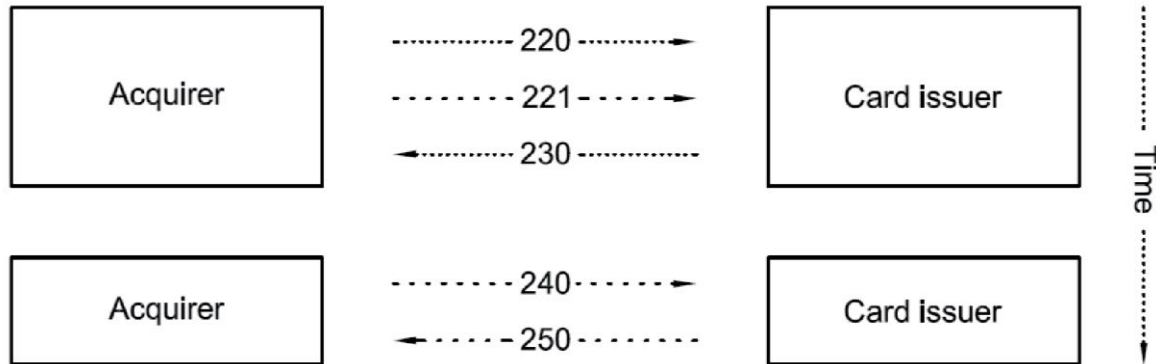


Figure E.6 — Financial accumulation presentment message flows

File action message class

File action description

A file action is used to add, change, delete or replace a file or record or inquire into a file or perform card administration, e.g. report lost or stolen cards. The Data record data element shall be used to convey specific file action record or file information.

File action notification/notification acknowledgement, instruction/instruction acknowledgement messages are the key components of the file transfer process (see E.20).

File action message rules

The following applies to all file action messages:

- a) A file action request message (304/305) shall be used when a file action is required. The Function code data element shall be used to indicate the type of file action required.
- b) A file action request response message (314) shall be sent in response to a file action request message (304/305). The Action code data element specifies the action taken or to be taken.
- c) A file action advice message (324/325) shall be used to inform the receiver of a file action that has been completed.
- d) A file action advice response message (334) shall be sent in response to a file action advice message (324/325). A file action advice response message (334) indicates the receiver's response to the file action advice message (324/325).
- e) A file action notification message (340/344) shall be used to inform the card issuer/receiver of a file action that has been completed. The acquirer/sender can periodically specify (in Batch/file

transfer message control) that the card issuer/receiver acknowledges the receipt of the most recently sent group of notification messages.

- f) A file action notification acknowledgement message (350/354) shall be sent in response to a file action notification message (340/344) only if the file action notification message (340/344) indicated (in Batch/file transfer message control) that an acknowledgement was required. The file action notification acknowledgement message (350/354) indicates that a certain number of preceding notification messages were received.
- g) A file action instruction message (362/364) shall be used to inform the acquirer/receiver of a file action to be completed. The card issuer/sender can periodically specify (in Batch/file transfer message control) that the acquirer/receiver acknowledges the receipt of the most recently sent group of instruction messages (362/364).
- h) A file action instruction acknowledgement message (372/374) shall be sent in response to a file action instruction message (362/364) only if the file action instruction message (362/364) indicated (in Batch/file transfer message control) that an acknowledgement was required. The file action instruction acknowledgement message (372/374) indicates that a certain number of preceding instruction messages (362/364) were received.

File action message type identifiers

Table E.12 defines the message type identifiers that may be used in a file action transaction.

Table E.12 — File action message type identifiers

MTI	Message	Purpose	From	To	Usage
304	File action request	Requests a file be updated	Sender	Receiver	
305	File action request repeat				
314	File action request response	Carries the answer to a file action request message	Receiver	Sender	Shall be sent in response to a 304 or a 305
324	File action advice	Advises of what was added, deleted or replaced in a file or record	Sender	Receiver	
325	File action advice repeat				
334	File action advice response	Carries the answer to a file action advice message	Receiver	Sender	Shall be sent in response to a 324 or a 325
340	File action notification	Notifies details of a file transfer action to be undertaken	Acquirer	Card issuer	
344	File action notification	Notifies of a file action or file transfer action to be undertaken	Sender	Receiver	

350	File action notification acknowledgement	Acknowledgement of one or more file action notification messages	Card issuer	Acquirer	Shall be sent in response to a 340 if Batch/file transfer message control requested acknowledgement
354	File action notification acknowledgement	Acknowledgement of one or more file action notification messages	Receiver	Sender	Shall be sent in response to a 344 if Batch/file transfer message control requested acknowledgement
362	File action instruction	Instruction regarding file transfer actions	Card issuer	Acquirer	
364	File action instruction	Instruction regarding file transfer actions	Sender	Receiver	
372	File action instruction acknowledgement	Acknowledgement of one or more file action instruction messages	Acquirer	Card issuer	Shall be sent in response to a 362 if Batch/file transfer message control requested acknowledgement
374	File action instruction acknowledgement	Acknowledgement of one or more file action instruction messages	Receiver	Sender	Shall be sent in response to a 364 if Batch/file transfer message control requested acknowledgement

File action mandatory and conditional data elements

Table E.13 lists the mandatory and conditional data elements used in file action messages. The condition codes are defined in Table E.1.

Table E.13 — File action mandatory and conditional data elements

File action messages		Message type identifiers				
Bit	Data element name	304 305	314	324 325	334	344
1	(see 4.3 for usage)					
2	Primary account number	28	16	28	16	28
7	Date and time transmission	30	30	30	30	30
11	Systems trace audit number	M	ME	M	ME	M
12	Date and time local transaction	M	ME	M	ME	M
18	Message error indicator		36		36	
24	Function code	M		M		M
25	Message reason code	28		28		28
33	Forwarding institution identification code	10	10	10	10	10
39	Action code		M	M	M	M
59	Transport data		16		16	

72	Data record	29		29		29
93	Transaction destination institution identification code	M	ME	M	ME	M
94	Transaction originator institution identification code	M	ME	M	ME	M
100	Receiving institution identification code	19	19	19	19	19
101	File name	29		29		29

Table E.14 lists the mandatory and conditional data elements used in file action messages, which are specific to file transfer. The condition codes are defined in Table E.1.

Table E.14 — File action mandatory and conditional data elements specific to file transfer

File action messages		Message type identifiers			
Bit	Data element name	340 344	350 354	362 364	372 374
1	(see 4.3 for usage)				
11	Systems trace audit number	M	ME	M	ME
12	Date and time local transaction	M		M	
24	Function code	M		M	
25	Message reason code	M		M	
33	Forwarding institution identification code	10		10	
39	Action code	M		M	
68	Batch/file transfer message control	M	ME	M	ME
69	Batch/file transfer control data	M		M	
70	File transfer description data	M		M	
72	Data record	M		M	
93	Transaction destination institution identification code	M	ME	M	ME
94	Transaction originator institution identification code	M	ME	M	ME
100	Receiving institution identification code	19		19	
101	File name	32		32	

File action message flows

Figure E.7 shows the sequence of messages that may flow in support of a file action request or advice messages.

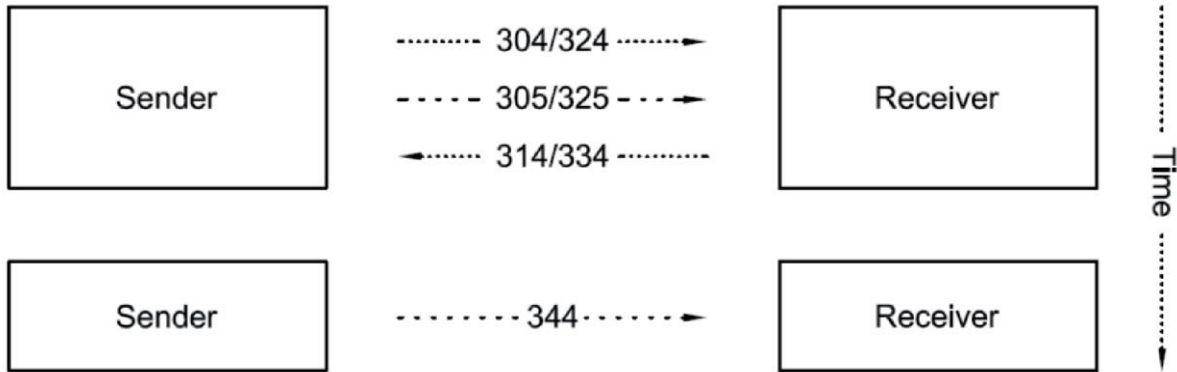


Figure E.7 — File action message flows

Figure E.8 shows the sequence of messages that may flow in support of file action notification or instruction messages.

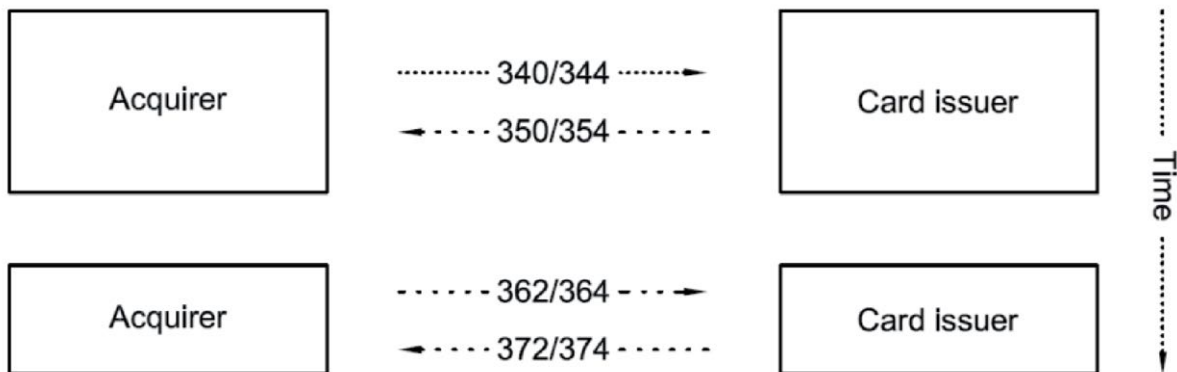


Figure E.8 — File action message flows for file transfer

Reversal message class

Reversal description

A reversal is the partial or complete nullification of the effects of a previous authorization, financial presentment or financial accumulation presentment that cannot be processed as instructed, i.e. is undeliverable, is cancelled or the acquirer times out waiting for a response (see 3.1.4).

The following applies to all reversals:

- a) A reversal shall not be reversed.
- b) Only 1xx or 2xx message classes shall be reversed.

Table E.15 shows 2xx financial presentments that are not reversals.

Table E.15 — Financial presentments that are not reversals

Function	Processing code	Function code
Adjustment	02, 22	200, 209
Return	20	200, 209
Representment	—	205, 206, 207, 208, 211, 212, 213, 214

Reversal message rules

Reversals shall use only the advice or notification messages since the activity has already occurred.

The following applies to all reversal messages:

- a) A reversal advice message (420/421) or reversal notification message (440) shall be sent by an acquirer whenever a previous authorization, financial presentment or financial presentment accumulation message cannot be processed as instructed, i.e. is undeliverable, is cancelled or the acquirer times out waiting for a response, in which case a reversal advice response message (430) shall be sent in response to a reversal advice message (420/421). A reversal advice shall not be declined except for specific reasons as defined in D.3.
- b) A reversal notification acknowledgement message (450) shall be sent in response to a reversal notification message (440) only if the reversal notification message indicated (in Batch/file transfer message control) that acknowledgement was required. The reversal notification acknowledgement message (450) indicates that a certain number of preceding notification messages were received.

Table E.16 — Amounts in reversal messages

Type of reversal	Amount transaction	Original amount transaction
Full	Amount reversed	—
Partial	Amount reversed	Original transaction amount

Reversal message type identifiers

Table E.17 defines the message type identifiers that may be used in a reversal transaction.

Table E.17

MTI	Message	Purpose	From	To	Usage
420	Reversal advice	Reverses an earlier authorization or financial presentment message	Acquirer	Card issuer	
421	Reversal advice repeat				
430	Reversal advice response	Carries the answer to a reversal advice message	Card issuer	Acquirer	Shall be sent in response to a 420 or a 421

440	Reversal notification	Notifies of a reversal action	Acquirer	Card issuer	
450	Reversal notification acknowledgement	Acknowledges receipt of one or more reversal notification messages	Card issuer	Acquirer	Shall be sent in response to a 440 if Batch/file transfer message control requested acknowledgement

Reversal mandatory and conditional data elements

Table E.18 lists the mandatory and conditional data elements used in reversal messages. The condition codes are defined in Table E.1.

Table E.18 — Reversal mandatory and conditional codes

Reversal messages		Message type identifiers			
Bit	Data element name	420 421	430	440	450
1	(see 4.3 for usage)				
2	Primary account number	07	16	07	
3	Processing code	03	16	03	
4	Amount transaction	M	M	M	
5	Amount reconciliation		05	05	
7	Date and time transmission	30	30	30	
9	Conversion rate reconciliation		05	05	
10	Conversion rate cardholder billing	04	04	04	
11	Systems trace audit number	M	ME	M	ME
12	Date and time local transaction	M	ME	M	
16	Date conversion		05	05	
18	Message error indicator		36		
21	Transaction life cycle identification data	33	33	33	33
24	Function code	M		M	
25	Message reason code	M		M	
28	Date reconciliation		12	12	
29	Reconciliation indicator		14	23	
30	Amounts original	08		08	
32	Acquiring institution identification code	M	ME	M	
33	Forwarding institution identification code	10	10	10	
39	Action code		M	M	

41	Card acceptor terminal identification	15	16	15	
42	Card acceptor identification code	15	16	15	
46	Amounts fees	01	01	01	
56	Original data elements	M		M	
58	Authorizing agent institution identification code	17		17	
59	Transport data		16		
68	Batch/file transfer message control			39	39
100	Receiving institution identification code	19	19	19	

Reversal message flows

Figure E.9 shows the sequence of messages that may flow in support of a reversal transaction.

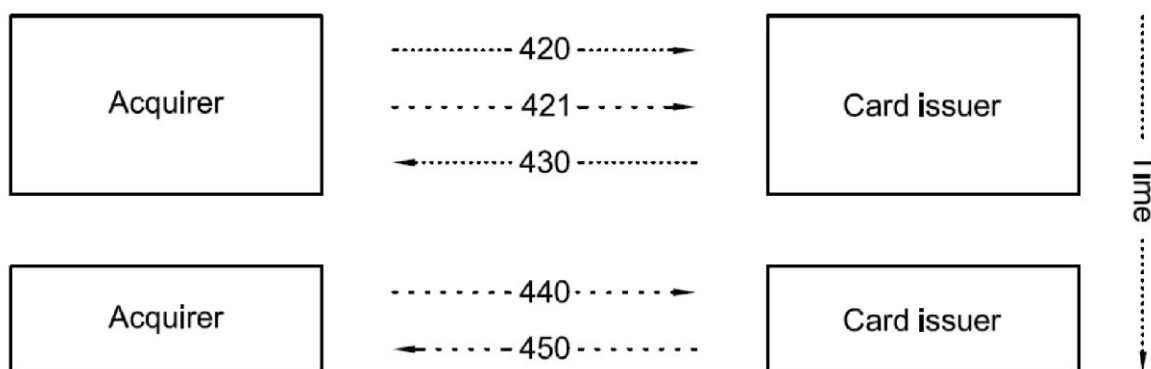


Figure E.9 — Reversal message flow

Chargeback message class

Chargeback description

A chargeback is the partial or complete nullification of a previous financial presentment or financial accumulation presentment when the card issuer determines that a customer dispute exists, or that an error or a violation of rules has been committed.

The following applies to all chargebacks:

- a) A card issuer only shall initiate a chargeback.
- b) A chargeback shall be generated only if the original transaction had financial impact on the cardholder's net position. A chargeback shall not be used to cancel a balance inquiry, account transfer or authorization.

- c) To cancel, either partially or completely, a previous chargeback that was submitted in error, the card issuer shall initiate a subsequent chargeback containing Original data elements pointing to the previous chargeback transaction.
- d) If the transaction that is being charged back requires a response, this response message shall be sent before the chargeback transaction is generated.
- e) A card issuer may charge back an original transaction plus any subsequent representment(s) submitted by the acquirer. A separate chargeback transaction shall be used for each.
- f) This document specifies no limits on the time frame or the number of chargebacks and representments that may be exchanged between an acquirer and card issuer.

Chargeback message rules

Chargebacks shall use only the advice or notification message since the activity has already occurred. The following applies to all chargeback messages.

- a) A chargeback advice message (422/423) or chargeback notification message (442) shall only be sent when the card issuer determines that a chargeback is appropriate and valid, in which case a chargeback advice response message (432) shall be sent in response to a chargeback advice message (422/423). A chargeback shall not be declined except for specific reasons as defined in A.1, although the acquirer may represent the original transaction.
- b) A chargeback notification acknowledgement message (452) shall be sent in response to a chargeback notification message (442) only if the chargeback notification message (442) indicated (in Batch/file transfer message control) that acknowledgement was required. The chargeback notification acknowledgement message (452) indicates that a certain number of preceding notification messages were received.

Table E.19 — Amounts in chargeback messages

Type of chargeback	Amount transaction	Original amount transaction
Full	Amount charged back	—
Partial	Amount charged back	Original transaction amount

Chargeback message type identifiers

Table E.20 defines the message type identifiers that may be used in a chargeback transaction.

Table E.20 — Chargeback message type identifiers

MTI	Message	Purpose	From	To	Usage
422	Chargeback advice	Charges back an earlier financial presentment	Card issuer	Acquirer	
423	Chargeback advice repeat				

432	Chargeback advice response	Carries the answer to a chargeback advice	Acquirer	Card issuer	Shall be sent in response to a 422 or a 423
442	Chargeback notification	Notifies of a chargeback action	Card issuer	Acquirer	
452	Chargeback notification acknowledgement	Acknowledges receipt of one or more chargeback notifications	Acquirer	Card issuer	Shall be sent in response to a 442 if Batch/file transfer message control requested acknowledgement

Chargeback mandatory and conditional data elements

Table E.21 lists the mandatory and conditional data elements used in chargeback messages. The condition codes are defined in Table E.1.

Table E.21 — Chargeback mandatory and conditional data elements

Chargeback messages		Message type identifiers			
Bit	Data element name	422 423	432	442	452
1	(see 4.3 for usage)				
2	Primary account number	07	16	07	
3	Processing code	M	ME	M	
4	Amount transaction	M	M	M	
5	Amount reconciliation		05	05	
7	Date and time transmission	30	30	30	
9	Conversion rate reconciliation		05	05	
11	Systems trace audit number	M	ME	M	ME
12	Date and time local transaction	M	ME	M	
16	Date conversion		05	05	
18	Message error indicator		36		
21	Transaction life cycle identification data	33	33	33	33
24	Function code	M		M	
25	Message reason code	M		M	
26	Merchant category code	M		M	
28	Date reconciliation		12	12	
29	Reconciliation indicator		14	23	
30	Amounts original	08		08	
31	Acquirer reference number	40		40	

32	Acquiring institution identification code		M	ME	M	
33	Forwarding institution identification code		10	10	10	
37	Retrieval reference number		17		17	
39	Action code			M	M	
43	Card acceptor name/location		M		M	
43	01-80 / 71.2	Card acceptor name	M		M	
43	01-85 / 71.7	Card acceptor country code	M		M	
46	Amounts fees		01	01	01	
56	Original data elements		M		M	
59	Transport data			16		
68	Batch/file transfer message control				39	39
100	Receiving institution identification code		19	19	19	

Chargeback message flows

Figure E.10 shows the sequence of messages that may flow in support of a chargeback transaction.

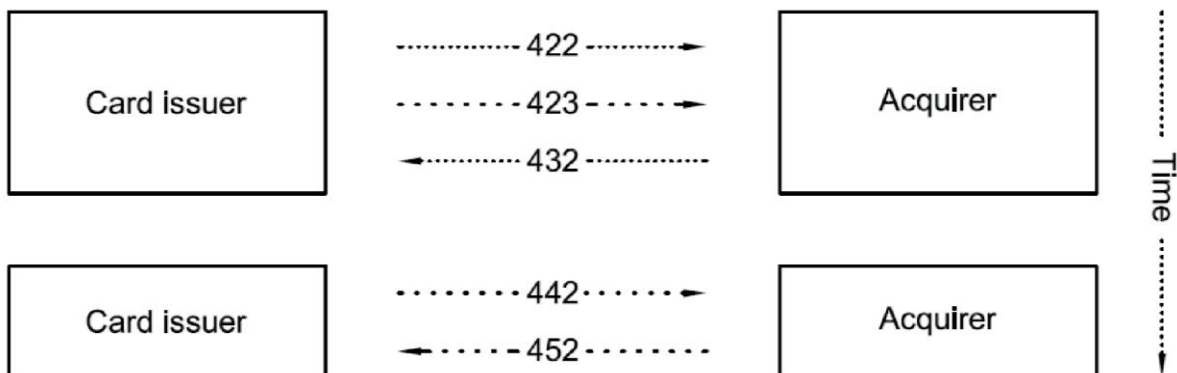


Figure E.10 — Chargeback message flow

Reconciliation message class

Reconciliation description

Reconciliation is the exchange of totals between two institutions (acquirer, card issuer or their agents) to reach agreement on financial totals.

The calculation of Amount net reconciliation shall be achieved by netting the debit and credit amounts in the reconciliation message (see Table 48).

Reconciliation in multiple currencies shall use a separate reconciliation message for each currency.

Two types of reconciliation are defined:

- a) A checkpoint reconciliation shall be indicated by the Function code “501” or “503”.
- b) A final reconciliation shall be indicated by the Function code “500” or “502”.

Reconciliation message rules

The following applies to all reconciliation messages:

- a) A reconciliation request message (500/501 or 502/503) shall be sent to request reconciliation totals (number and value).
- b) A reconciliation request response message (510/512) shall be sent in response to a reconciliation request message (500/501 or 502/503). A reconciliation request response message (510/512) shall contain the requested totals, if available, and shall indicate one of the following results:
 - 1) totals provided, i.e. all amounts and number data elements shall be returned with the values from the institution sending the reconciliation request response message;
 - 2) totals not available, i.e. all amount and number data elements shall be returned with zero values;
 - 3) the totals shall be used to indicate the originating institution's position as either acquirer or card issuer (but not both) as defined by the message type identifier.
- c) A reconciliation advice message (520/521 or 522/523) shall be sent to seek the confirmation of totals (number and value).
- d) A reconciliation advice response message (530/532) shall be sent in response to a reconciliation advice message (520/521 or 522/523) and shall indicate one of the following results:
 - 1) reconciled, in balance, i.e. only the Amount net reconciliation data element shall be returned in the reconciliation advice response message;
 - 2) reconciled, out of balance, i.e. all amount and number data elements shall be returned with the values from the institution sending the reconciliation advice response message;
 - 3) totals not available, i.e. all amount and number data elements shall be returned with zero values.
- e) A reconciliation notification message (540/542) shall be used to provide totals (number and value). The totals contained in the reconciliation notification message (540/542) shall indicate an originating institution's position as either an acquirer or card issuer (but not both) as defined by the message type identifier. The reconciliation notification message may require acknowledgement.

- f) A reconciliation notification acknowledgement message (550/552) shall be sent in response to a reconciliation notification message (540/542) only if the reconciliation notification message indicated (in Batch/file transfer message control) that an acknowledgement was required and shall indicate one of the following results:
- 1) reconciled, in balance, i.e. only the Amount net reconciliation data element shall be returned in the Reconciliation notification acknowledgement message;
 - 2) reconciled, out of balance, i.e. all amount and number data elements shall be returned with the values from the institution sending the reconciliation notification acknowledgement message;
 - 3) totals not available, i.e. all amount and number data elements shall be returned with zero values.

Reconciliation message type identifiers

Table E.22 defines the message type identifiers that may be used in a reconciliation transaction.

Table E.22 — Reconciliation message type identifiers

MTI	Message	Purpose	From	To	Usage
500	Acquirer reconciliation request	Acquirer requests the card issuer's totals (number and value) for the last reconciliation period	Acquirer	Card issuer	
501	Acquirer reconciliation request repeat				
510	Acquirer reconciliation request response	Carries the card issuer's totals (number and value) in response to a reconciliation request message	Card issuer	Acquirer	Shall be sent in response to a 500 or a 501
520	Acquirer reconciliation advice	Advises of acquirer's totals (number and value) for the last reconciliation period	Acquirer	Card issuer	
521	Acquirer reconciliation advice repeat				
530	Acquirer reconciliation advice response	Carries the answer to a reconciliation advice message	Card issuer	Acquirer	Shall be sent in response to a 520 or a 521
540	Acquirer reconciliation notification	Notifies the card issuer of the acquirer's totals (number and value) for the last reconciliation period	Acquirer	Card issuer	

550	Acquirer reconciliation notification acknowledgement	Acknowledges one or more acquirer reconciliation notification messages	Card issuer	Acquirer	Shall be sent in response to a 540 if Batch/file transfer message control requested an acknowledgement
502	Card issuer reconciliation request	Card issuer requests acquirer's totals (number and value) for the last reconciliation period	Card issuer	Acquirer	
503	Card issuer reconciliation request repeat				
512	Card issuer reconciliation request response	Carries acquirer's totals (number and value) in response to a reconciliation request message	Acquirer	Card issuer	Shall be sent in response to a 502 or a 503
522	Card issuer reconciliation advice	Advise of the card issuer's totals (number and value) for the last reconciliation period	Card issuer	Acquirer	
523	Card issuer reconciliation advice repeat				
532	Card issuer reconciliation advice response	Carries the answer to a reconciliation advice message	Acquirer	Card issuer	Shall be sent in response to a 522 or a 523
542	Card issuer reconciliation notification	Notifies the acquirer of the card issuer's totals (number and value) for the last reconciliation period	Card issuer	Acquirer	
552	Card issuer reconciliation notification acknowledgement	Acknowledges one or more card issuer reconciliation notification messages	Acquirer	Card issuer	Shall be sent in response to a 542 if Batch/file transfer message control requested an acknowledgement

Reconciliation mandatory and conditional data elements

Table E.23 lists the mandatory and conditional data elements used in reconciliation messages. The condition codes are defined in Table E.1.

In fee reconciliation messages, the PAN contains the card issuer's institution identification number only (shall conform with ISO/IEC 7812-1).

Table E.23 — Reconciliation mandatory and conditional data elements

Reconciliation messages	Message type identifiers
--------------------------------	---------------------------------

Bit	Data element name	500	510	520	530	540	550
		501	512	521	532	542	552
		502	512	522	532	542	552
		503		523			
1	(see 4.3 for usage)						
7	Date and time transmission	30	30	30	30	30	
11	Systems trace audit number	M	ME	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME	M	
18	Message error indicator		36		36		
21	Transaction life cycle identification data	33	33	33	33	33	33
24	Function code	M		M		M	
28	Date reconciliation	M	ME	M	ME	M	
29	Reconciliation indicator	23	16	23	16	23	
32	Acquiring institution identification code	M	ME	M	ME	M	
33	Forwarding institution identification code	10	10	10	10	10	
39	Action code		M		M		
59	Transport data		16		16		
68	Batch/file transfer message control					39	39
74	Reconciliation data primary		M	M	13	M	
97	Amount net reconciliation		M	M	M	M	
100	Receiving institution identification code	19	19	19	19	19	
109	Reconciliation fee amounts credit		01	01	13	01	
110	Reconciliation fee amounts debit		01	01	13	01	

Reconciliation message flows

Acquirer reconciliation

Figure E.11 shows the sequence of messages that may flow in support of an acquirer reconciliation transaction.

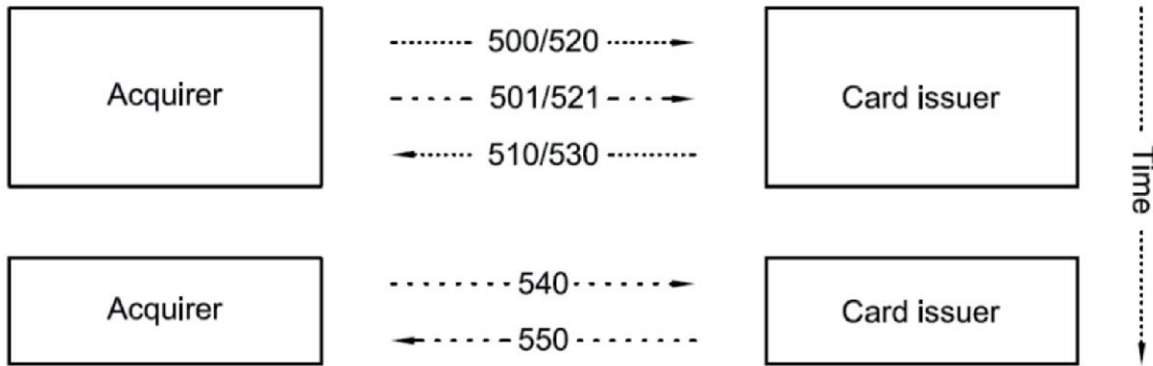


Figure E.11 — Acquirer reconciliation message flows

Card issuer reconciliation

Figure E.12 shows the sequence of messages that may flow in support of a card issuer reconciliation transaction.

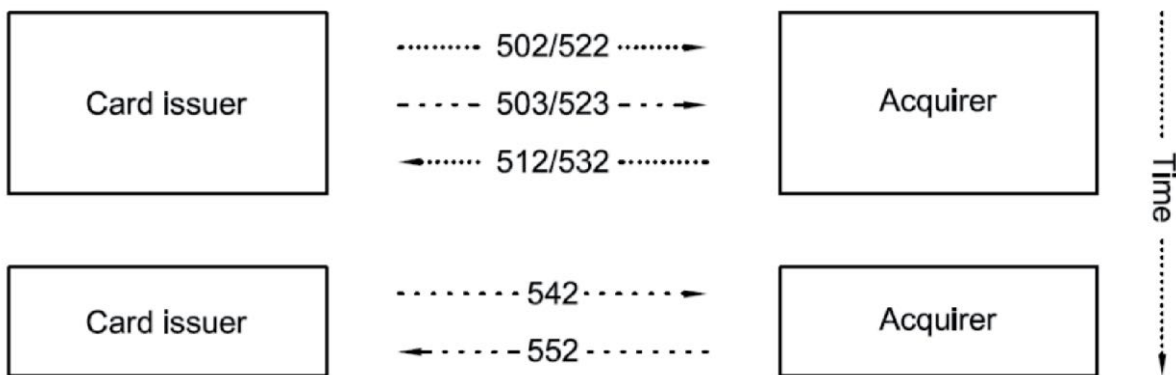


Figure E.12 — Card issuer reconciliation message flows

Reconciliation calculation

All amounts in the reconciliation messages are in the currency of reconciliation. The “x” portion of the fee data elements defined as xn 12 shall contain a “D” if the fee is due to the acquirer or a “C” if the fee is due from the acquirer.

For the purposes of Table E.24, it is assumed that the transaction currency is the same currency as that of reconciliation. If the currency of reconciliation is different from that of the transaction, then the reconciliation amounts and fees shall be added to the Reconciliation data primary elements in place of the transaction amounts and fees.

The first portion of Table E.24 identifies how the specified amount data elements from individual authorization, financial presentments, reversal, chargeback and fee collections shall be computed for reconciliation. The second portion identifies how the reconciliation counts shall be accumulated for inquiries, authorizations, payments, transfers, financial presentments, reversals, chargebacks and fee

collections. A repeat (xx1 or xx3) message is not added to reconciliation totals unless the original message was not received.

The following steps shall be taken to calculate the Amount net reconciliation:

- a) From the sum of:
 - reconciliation fee amounts credit;
 - credits amount;
 - credits reversal amount;
 - credits chargeback amount.

- b) Subtract the sum of:
 - reconciliation fee amounts debit;
 - debits amount;
 - debits reversal amount;
 - debits chargeback amount.

If the Amount net reconciliation, after completing the foregoing computation, results in a negative value, the character “D” shall be inserted into the “x” portion of Amount net reconciliation. Otherwise, the character “C” shall be inserted in the “x” portion.

Table E.24 — Reconciliation calculation

MTI		“x” portion of amounts fees	Add data element	To data element	Bit
Amount calculations					
1xx, 2xx, 4xx, 7xx		C	Amount fee of amounts fees	Amount fee total of reconciliation fee amounts credit	109-2
1xx, 2xx, 4xx, 7xx		D		Amount fee total of reconciliation fee amounts debit	110-2
MTI	Original MTI	Processing code	Add data element	To data element	Bit
2xx	—	00-19	Amount transaction	Debits amount	74-7
2xx	—	20-29		Credits amount	74-1
4x0	2xx	00-19		Credits reversal amount	74-5
4x0	2xx	20-29		Debits reversal amount	74-11
4x2	—	00-19		Credits chargeback amount	74-3

4x2	—	20-29		Debits chargeback amount	74-9
4x2	4x2	00-19		Debits chargeback amount	74-9
4x2	4x2	20-29		Credits chargeback amount	74-3
Count calculations					
1xx, 2xx, 4xx		C	Numeric value of 1	Number fee total of reconciliation fee amounts credit	109-3
1xx, 2xx, 4xx		D		Number fee total of reconciliation fee amounts debit	110-3
MTI	Original MTI	Processing Code	Add	To data element	Bit
1xx	—	00-29	Numeric value of 1	Authorizations number	75-1
1xx	—	30-39		Inquiries number	75-4
2xx	—	00-19		Debits number	74-8
2xx	—	20-29		Credits number	74-2
2xx	—	40-49		Transfers number	75-8
2xx	—	50-59		Payments number	75-6
4x0	2xx	00-19		Credits reversal number	74-6
4x0	2xx	20-29		Debits reversal number	74-12
4x2	2xx	00-19		Credits chargeback number	74-4
4x2	2xx	20-29		Debits chargeback number	74-10
4x2	4x2	00-19		Debits chargeback number	74-10
4x2	4x2	20-29		Credits chargeback number	74-4
4x0	1xx	00-29		Authorizations reversal number	75-2
4xx	—	30-39		Inquiries reversal number	75-3
4xx	—	40-49		Transfers reversal number	75-9
4xx	—	50-59		Payments reversal number	75-7
7xx	—	n/a		Fee collections number	75-5

Reconciliation transaction flows

If the network management messages are used to initiate cutover, the following applies.

- a) The receiver of the network management request or advice message indicating cutover or checkpoint shall initiate new transactions with the new Date reconciliation or Reconciliation indicator (as indicated in the network management request or advice message) only after sending the network management response message.

- b) The sender of the network management request or advice message indicating cutover or checkpoint shall initiate new transactions with the new Date reconciliation or Reconciliation indicator only after receiving the network management response message.
- c) The reconciliation request or advice message shall be sent with the previous Date reconciliation or Reconciliation indicator only after receiving (or sending) the network management response message (see Figure E.13).
- d) Reconciliation dates are in CCYYMMDD format.

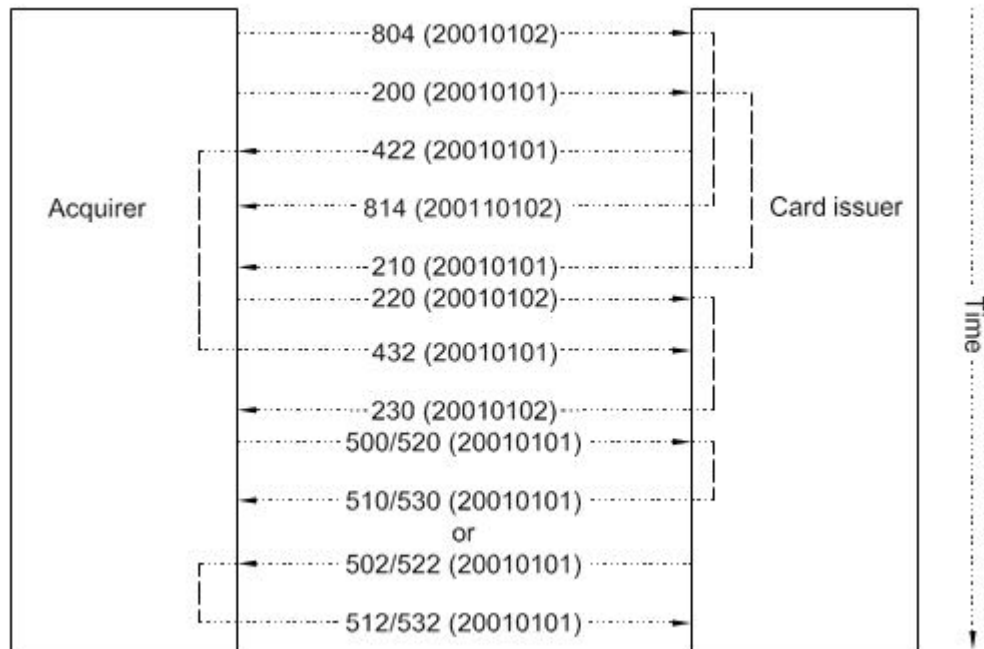


Figure E.13 — Reconciliation example

Administrative message class

Administrative description

Administrative activity is anything that supports the business and technical infrastructure between financial institutions and their agents. The Function code is used to indicate the type of administrative activity that is required (see D.14).

Administrative message rules

The following applies to all administrative messages:

- a) An administrative request, advice or notification message (604/605 or 624/625 or 644) may be initiated by either the sender or receiver as needed.

- b) An administrative request response message (614) shall be sent in response to an administrative request message (604/605). The administrative request response message (614) indicates receipt of the administrative request message (604/605).
- c) An administrative advice response message (634) shall be sent in response to an administrative advice message (624/625) to indicate receipt of the administrative advice message (624/625).
- d) An administrative notification acknowledgement message (654) shall be sent in response to an administrative notification message (644) only if the administrative notification message (644) indicated (in Batch/file transfer message control) that acknowledgement was required. The administrative notification acknowledgement message (654) indicates that a certain number of preceding notification messages were received.

Administrative message type identifiers

Table E.25 defines the message type identifiers that may be used in an administrative transaction.

Table E.25 — Administrative message type identifiers

MTI	Message	Purpose	From	To	Usage
604	Administrative request	Requests information to support the interchange network	Sender	Receiver	
605	Administrative request repeat				
614	Administrative request response	Carries the answer to an administrative request message	Receiver	Sender	Shall be sent in response to a 604 or a 605
624	Administrative advice	Advises of information to support the interchange network	Sender	Receiver	
625	Administrative advice repeat				
634	Administrative advice response	Carries the answer to an administrative advice message	Receiver	Sender	Shall be sent in response to a 624 or a 625
644	Administrative notification	Notifies of an administrative action	Sender	Receiver	
654	Administrative notification acknowledgement	Acknowledges receipt or one or more administrative notification messages	Receiver	Sender	Shall be sent in response to a 644 if Batch/file transfer message control requested acknowledgement

Administrative mandatory and conditional data elements

Table E.26 lists the mandatory and conditional data elements used in administrative messages. The condition codes are defined in Table E.1.

Table E.26 — Administrative mandatory and conditional data elements

Administrative messages		Message type identifiers					
Bit	Data element name	604 605	614	624 625	634	644	654
1	(see 4.3 for usage)						
7	Date and time transmission	30	30	30	30	30	
11	Systems trace audit number	M	ME	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME	M	
18	Message error indicator		36		36		
24	Function code	M		M		M	
33	Forwarding institution identification code	10	10	10	10	10	
39	Action code		M	M	M	M	
59	Transport data		16		16		
68	Batch/file transfer message control					39	39
72	Data record	M		M		M	
93	Transaction destination institution identification code	M	ME	M	ME	M	
94	Transaction originator institution identification code	M	ME	M	ME	M	
100	Receiving institution identification code	19	19	19	19	19	

Administrative message flows

Figure E.14 shows the sequence of messages that may flow in support of an administrative transaction.

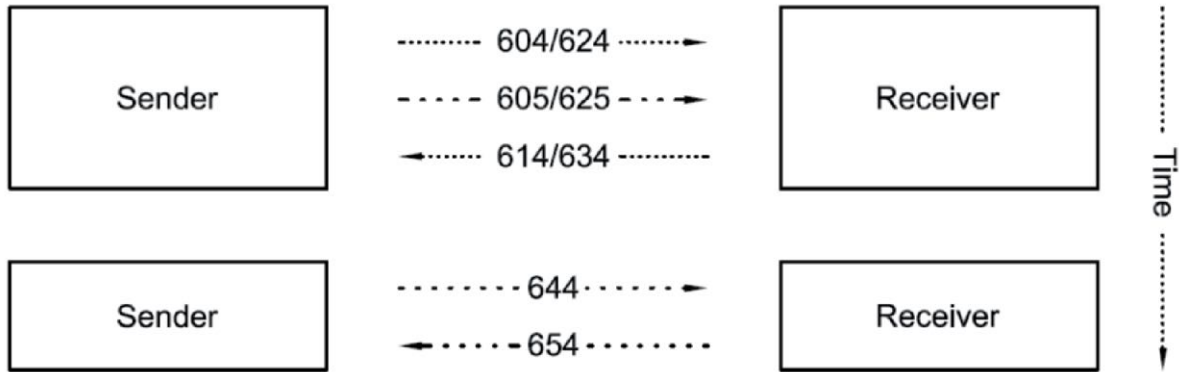


Figure E.14 — Administrative message flows

Retrieval and retrieval fulfilment

Retrieval and retrieval fulfilment description

A retrieval is the activity (by the card acceptor, acquirer or relevant agent) needed to support a card issuer who has determined that a transaction information document needs to be examined before a potential chargeback is sent or to satisfy another need of the card issuer or cardholder. The Message reason code is used to indicate the specific reason for the retrieval (D.16). Only a card issuer can send a retrieval request.

A retrieval fulfilment is where an acquirer has successfully retrieved the requested information or where the reason it was not provided is advised. The Function code (see D.14) is used to indicate the result to the card issuer. Only an acquirer can send a retrieval fulfilment.

Retrieval and retrieval fulfilment message rules

Retrieval uses the request/response and notification/acknowledgement messages from the administrative message class. Retrieval fulfilment uses the notification/acknowledgement messages from the administrative message class.

The following applies to administrative messages when used for retrieval.

- a) An administrative request message (602/603) or administrative instruction message (662) shall be sent when the card issuer requires sight of a transaction information document.
- b) An administrative request response message (612) shall be sent in response to an administrative request message (602/603). The administrative request response message (612) indicates receipt of the administrative request message (602/603). It is not a retrieval fulfilment.
- c) An administrative instruction acknowledgement message (672) shall be sent in response to an administrative instruction message (662) only if the administrative instruction message (662) indicated in Batch/file transfer message control that acknowledgement was required. The administrative instruction acknowledgement message (672) indicates that a certain number of preceding instruction messages were received. It is not a retrieval fulfilment.

The following applies to administrative messages when used for retrieval fulfilment.

- An administrative notification message (640) shall be sent by the acquirer to indicate the results of the retrieval fulfilment.
- An administrative notification acknowledgement message (650) shall be sent by the card issuer in response to an administrative notification message (640) only if the administrative notification message (640) indicated in Batch/file transfer message control that acknowledgement was required. The administrative notification acknowledgement message (650) indicates that a certain number of preceding notification messages were received.

Retrieval and retrieval fulfilment message type identifiers

Table E.27 defines the administrative message type identifiers that may be used in support of a retrieval.

Table E.27 — Retrieval message type identifiers

MTI	Message	Purpose	From	To	Usage
602	Administrative request	Request for transaction information	Card issuer	Acquirer	
603	Administrative request repeat				
612	Administrative request response	Indicates receipt of previous administrative request message	Acquirer	Card issuer	Shall be sent in response to a 602 or a 603
662	Administrative instruction	Request for transaction information	Card issuer	Acquirer	
672	Administrative instruction acknowledgement	Acknowledges receipt of one or more administrative instruction messages	Acquirer	Card issuer	Shall be sent in response to a 662 if Batch/file transfer message control requested acknowledgement

Table E.28 defines the administrative message type identifiers that may be used in support of a retrieval fulfilment.

Table E.28 — Retrieval fulfilment message type identifiers

MTI	Message	Purpose	From	To	Usage
640	Administrative notification	Indicates whether previous retrieval could be fulfilled and method of delivery	Acquirer	Card issuer	
650	Administrative notification acknowledgement	Acknowledges receipt of one or more administrative notification messages	Card issuer	Acquirer	Shall be sent in response to a 640 if Batch/file transfer message control requested acknowledgement

Retrieval and retrieval fulfilment mandatory and conditional data elements

Table E.29 lists the mandatory and conditional data elements used in administrative messages when used in support of retrieval and retrieval fulfilment. The condition codes are defined in Table E.1.

Table E.29 — Retrieval and retrieval fulfilment mandatory and conditional data elements

Administrative messages		Message type identifiers			
Bit	Data element name	602 603	612	640 662	650 672
1	(see 4.3 for usage)				
2	Primary account number	07	16	07	
11	Systems trace audit number	M	ME	M	ME
12	Date and time local transaction	M	ME	M	
18	Message error indicator		36		
21	Transaction life cycle identification data	33	33	33	33
24	Function code	M		M	
25	Message reason code	M		M	
30	Amounts original	08	08	08	
31	Acquirer reference number	40	40	40	
32	Acquiring institution identification code	M	ME	M	
33	Forwarding institution identification code	10	10	10	
37	Retrieval reference number	15		15	
39	Action code		M	M	
68	Batch/file transfer message control			39	39
100	Receiving institution identification code	19	19	19	

Retrieval and retrieval fulfilment message flows

Figure E.15 shows the sequence of administrative messages that may flow in support of a retrieval.

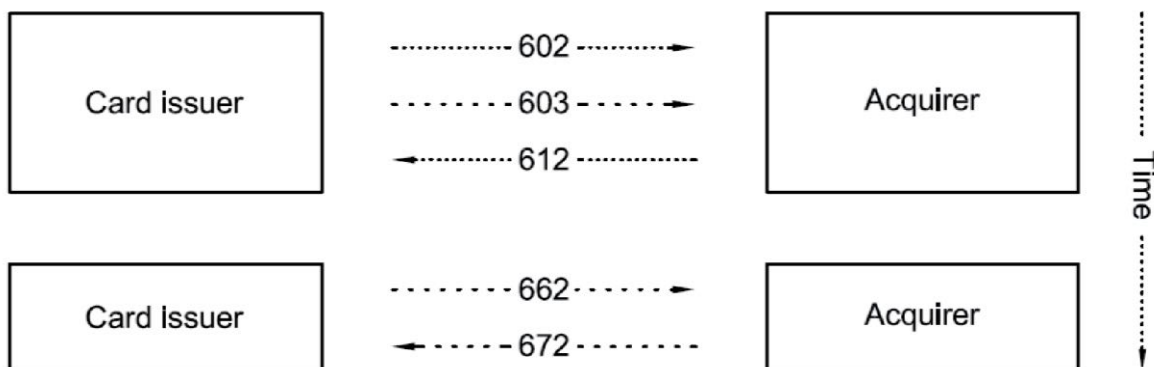
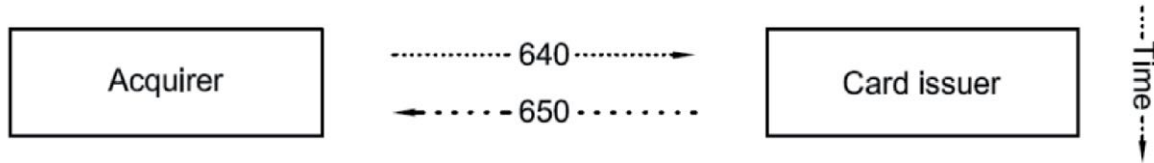


Figure E.15 — Retrieval message flows

Figure E.16 shows the sequence of administrative messages that may flow in support of a retrieval fulfilment.

**Figure E.16 — Retrieval fulfilment message flows**

Error messages

Error messages description

Error messages allow for the details of specific errors to be returned to the message sender (see 6.2 and E.4).

Error messages message rules

Error messages use the notification/acknowledgement messages from the administrative message class.

The following applies to all administrative messages when used for error messages:

- a) All error messages shall be sent as administrative notification messages.
- b) An administrative notification message (644) shall be sent in response to any previously submitted message.
 - i) The Function code shall be “652” if the error condition results in the rejection of a single message and the Message error indicator data elements shall provide a code that explains the error condition;
 - ii) The Function code shall be “653” if the error condition results in the rejection of an entire batch or file. The Message error indicator data element shall provide a code that explains the error condition. Only one administrative message shall be returned for the entire batch or file, i.e. the receiver shall not return every single message in the batch or file.
 - iii) If the Function code is “650” or “651”, the Message error indicator is not required.
- c) An administrative notification acknowledgement message (654) shall be generated in response to an administrative notification message (644) only if the administrative notification message (644) indicated (in Batch/file transfer message control) that acknowledgement was required. The administrative notification acknowledgement message (654) indicates that a certain number of preceding notification messages were received.

- d) Within an administrative notification message, the Data record data element shall contain the invalid data and/or any additional information that will assist in correcting the error condition.

Error messages message type identifiers

Table E.30 defines the administrative message type identifiers that may be used in error messages.

Table E.30 — Error messages message type identifiers

MTI	Message	Purpose	From	To	Usage
644	Administrative notification	Notifies of an error condition detected by the receiver in a previously submitted message	Receiver	Sender	Shall be sent by the receiver of a message that cannot be parsed, a message that contains an unrecognized MTI, or a notification or instruction message in which the receiver detected an error condition.
654	Administrative notification acknowledgement	Acknowledges receipt of one or more administrative notification messages	Sender	Receiver	Shall be sent in response to a 644 if Batch/file transfer message control requested acknowledgement

Error messages mandatory and conditional data elements

Table E.31 lists the mandatory and conditional data elements used in administrative messages when used in support of error messages. The condition codes are defined in Table E.1.

Table E.31 — Error messages mandatory and conditional data elements

Administrative messages		MTI	
Bit	Data element name	644	654
1	(see 4.3 for usage)		
11	Systems trace audit number	M	ME
12	Date and time local transaction	M	M
18	Message error indicator	41	
21	Transaction life cycle identification data	37	16
24	Function code	M	
33	Forwarding institution identification code	10	
68	Batch/file transfer message control	37	
69	Batch/file transfer control data	37	

72	Data record	M	
93	Transaction destination institution identification code	M	
94	Transaction originator institution identification code	M	
100	Receiving institution identification code	19	

Error messages message flows

Figure E.17 shows the sequence of administrative messages that may flow in support of an error message where all or part of the MTI is not recognized or the receiver is unable to parse the message.

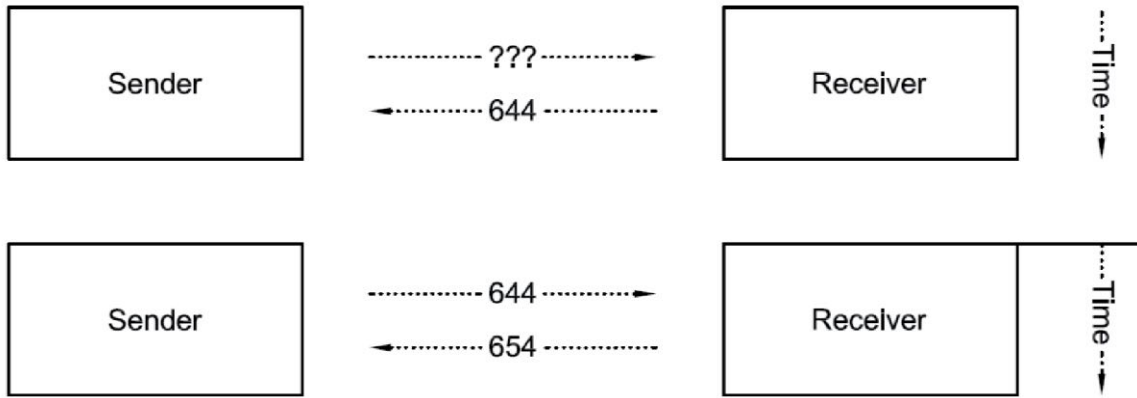


Figure E.17 — Error messages flows when message type cannot be recognized

Figure E.18 shows the sequence of administrative messages that may flow in support of an error message where the MTI indicates a notification or instruction message and there are errors within the message.

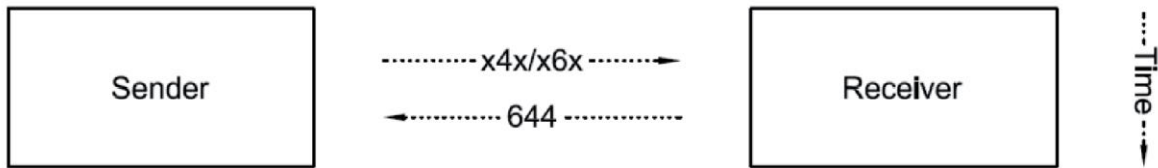


Figure E.18 — Error messages flow when notification or instruction message contains errors

Fee collection message class

Fee collection description

Fee collection is the activity that supports the collection and disbursement of miscellaneous service fees between financial institutions.

Fee collection has financial impact and affect reconciliation totals (see Table E.24). Fee collection shall not affect a cardholder account.

To cancel, either partially or completely, a previous fee collection transaction that was submitted in error, a further fee collection transaction shall be sent using Function code 701.

Fee collection message rules

The following applies to all fee collection messages:

- a) Fee collection messages may be in either direction, i.e. acquirer to card issuer or card issuer to acquirer.
- b) A fee collection advice message (720/721 or 722/723) or fee collection notification message (740/742) shall be sent when an institution wishes to claim or pay a miscellaneous service fee.
- c) A fee collection advice response message (730/732) shall be sent in response to a fee collection advice (720/721 or 722/723) message. A fee collection advice response message (730/732) indicates the receiver's response to the fee collection advice message (720/721 or 722/723). A fee collection advice message (720/721 or 722/723) shall not be declined by the receiver, except for the specific reasons defined in D3.
- d) A fee collection notification acknowledgement message (750/752) shall be sent in response to a fee collection notification message (740/742) only if the fee collection notification message (740/742) indicated (in Batch/file transfer message control) that acknowledgement was required. The fee collection notification acknowledgement message (750/752) indicates that a certain number of preceding notification messages were received.

Fee collection message type identifiers

Table E.32 defines the message type identifiers that may be used in a fee collection transaction.

Table E.32 — Fee collection message type identifiers

MTI	Message	Purpose	From	To	Usage
720	Acquirer fee collection advice	Advises of a service fee due to be collected	Acquirer	Card issuer	
721	Acquirer fee collection advice repeat				
730	Acquirer fee collection advice response	Carries the answer to an acquirer fee collection advice	Card issuer	Acquirer	Shall be sent in response to a 720 or a 721
740	Acquirer fee collection notification	Notifies of a service fee due to be collected	Acquirer	Card issuer	

750	Acquirer fee collection notification acknowledgement	Acknowledges receipt of one or more acquirer fee collection notifications	Card issuer	Acquirer	Shall be sent in response to a 740 if Batch/file transfer message control requested acknowledgement
722	Card issuer fee collection advice	Advises of a service fee due to be collected	Card issuer	Acquirer	
723	Card issuer fee collection advice repeat				
732	Card issuer fee collection advice response	Carries the answer to a card issuer fee collection advice	Acquirer	Card issuer	Shall be sent in response to a 722 or a 723
742	Card issuer fee collection notification	Notifies of a service fee due to be collected	Card issuer	Acquirer	
752	Card issuer fee collection notification acknowledgement	Acknowledges receipt of one or more card issuer fee collection notifications	Acquirer	Card issuer	Shall be sent in response to a 742 if Batch/file transfer message control requested acknowledgement

Fee collection mandatory and conditional data elements

Table E.33 lists the mandatory and conditional data elements used in fee collection messages. The condition codes are defined in Table E.1.

Table E.33 — Fee collection mandatory and conditional data elements

Fee collection messages		Message type identifiers						
Bit	Data element name	720 721	730	740	742	722 723	732	750 752
1	(see 4.3 for usage)							
2	Primary account number	44	ME	44	44	44	ME	
7	Date and time transmission	30	30	30	30	30	30	
11	Systems trace audit number	M	ME	M	M	M	ME	ME
12	Date and time local transaction	M	ME	M	M	M	ME	
18	Message error indicator		36				36	
21	Transaction life cycle identification data	34	34	34	34	34	34	34
24	Function code	M		M	M	M		
28	Date reconciliation		12	12	12		12	
29	Reconciliation indicator		14	23	23		14	
31	Acquirer reference number	40		40	40	40		

32	Acquiring institution identification code	M	ME	M	M	M	ME	
33	Forwarding institution identification code	10	10	10	10	10	10	
39	Action code		M	M	M		M	
46	Amounts fees	M	ME	M	M	M	ME	
59	Transport data		16				16	
68	Batch/file transfer message control			39	39			39
100	Receiving institution identification code	49	ME	49	19	19	ME	

Fee collection message flows

Acquirer fee collection

Figure E.19 shows the sequence of messages that may flow in support of an acquirer fee collection transaction.

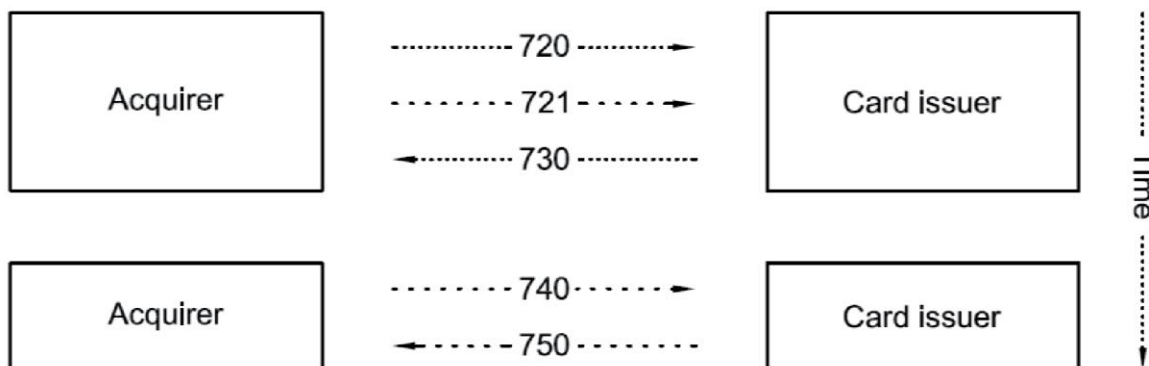


Figure E.19 — Acquirer fee collection message flows

Card issuer fee collection

Figure E.20 shows the sequence of messages that may flow in support of a card issuer fee collection transaction.

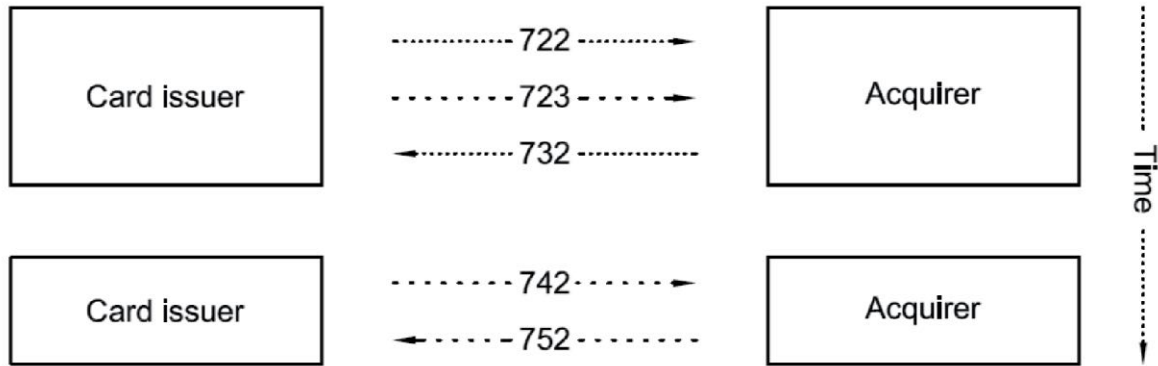


Figure E.20 — Card issuer fee collection message flows

Network management message class

Network management description

Network management is the range of activities carried out to control the system security and operating condition of the interchange network and may be initiated by any interchanging party.

The following types of network management activity are defined:

- System condition management, which is used to establish and report system availability and to give instructions pertaining to message handling during periods of system unavailability. These messages may be used as part of normal system initialization or shutdown or as part of a failure recovery scheme.
- System security management, which is used to control security aspects of the interchange system such as key and password management and security alerts. These messages may be used as part of a security procedure, e.g. automatic periodic key changes (see E.18).
- System accounting management, which is used to identify the end of a reconciliation period. These messages may be used as part of a reconciliation process (see E.12). The receiver shall not decline system accounting messages unless for specific reasons as defined in D3.
- System audit controls management, which is used to test integrity of interchange links and/or used as part of an integrity check or failure recovery scheme.
- Batch and file transfer header and trailer control management, which is used to denote the start and/or end of batch or file transfer.

Network management message rules

The following applies to all network management messages:

- A network management request message (804/805) shall be sent to request a network management activity.

- b) A network management response message (814) shall be sent in response to a network management request message (804/805).
- c) A network management advice message (824/825) shall be sent to advise of a network management activity.
- d) A network management advice response message (834) shall be sent in response to a network management advice message (824/825) to indicate receipt of the network management message (824/825).
- e) A network management notification message (844) shall be sent to advise of a network management activity.
- f) A network management notification acknowledgement message (854) shall only be sent in response to a network management notification message (844) if the network management notification message indicated (in Batch/file transfer message control) that an acknowledgement was required (e.g. to confirm that a complete batch or file has been received).

Network management message type identifiers

Table E.34 defines the message type identifiers that may be used in a network management transaction.

Table E.34 — Network management message type identifiers

MTI	Message	Purpose	From	To	Usage
804	Network management request	Requests a network management, batch transfer or file transfer activity	Sender	Receiver	
805	Network management request repeat				
814	Network management request response	Carries the answer to a network management or batch/file transfer request message	Receiver	Sender	Shall be sent in response to a 804 or a 805
824	Network management advice	Advises of a network management activity	Sender	Receiver	
825	Network management advice repeat				
834	Network management advice response	Carries the answer to a network management advice	Receiver	Sender	Shall be sent in response to a 824 or a 825

844	Network management notification	Notifies of a network management or batch/file transfer action	Sender	Receiver	
854	Network management notification acknowledgement	Acknowledges completion of one or more network activities	Receiver	Sender	Shall be sent in response to a 844 if Batch/file transfer message control requested acknowledgement

Network management mandatory and conditional data elements

Table E.35 lists the mandatory and conditional data elements used in network management messages. The condition codes are defined in Table E.1.

Table E.35 — Network management mandatory and conditional data elements

Network management messages		Message type identifiers					
Bit	Data element name	804 805	814	824 825	834	844	854
1	(see 4.3 for usage)						
7	Date and time transmission	30	30	30	30	30	30
11	Systems trace audit number	M	ME	M	ME	M	M
12	Date and time local transaction	M	ME	M	ME	M	ME
18	Message error indicator		36		36		
24	Function code	M		M		M	
25	Message reason code	39				39	
28	Date reconciliation	24	16	24	16	24	
29	Reconciliation indicator	25	16	25	16	25	
33	Forwarding institution identification code	10	10	10	10	10	
39	Action code		M	M	M	M	
59	Transport data		16		16		
68	Batch/file transfer message control					39	39
69	Batch/file transfer control data	39	ME			39	ME
70	File transfer description data	38	ME			38	ME
93	Transaction destination institution identification code	M	ME	M	ME	M	ME
94	Transaction originator institution identification code	M	ME	M	ME	M	ME
100	Receiving institution identification code	19	19	19	19	19	19

Network management message flows

Figure E.21 shows the sequence of messages that may flow in support of a network management transaction.

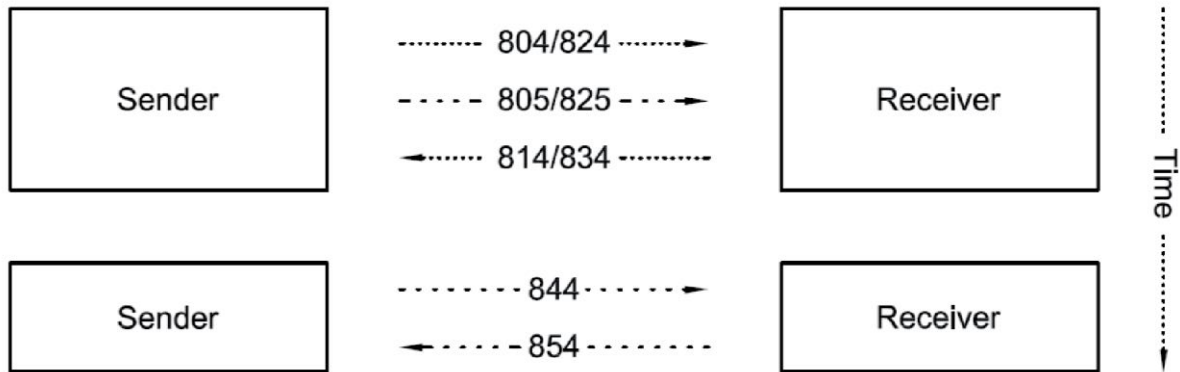


Figure E.21 — Network management message flows

Key management

Key management description

Key management is the activity of requesting or exchanging information regarding cryptographic keys, such as request key change or request verification of key.

Key management message rules

Key management uses the request/response and advice/response messages from the network management message class.

The following applies to all network management messages when used for key management:

- A network management request message (804/805) shall be sent to request a key management activity.
- A network management response message (814) shall be sent in response to a network management request (804/805).
- A network management advice message (824/825) shall be to convey information about a cryptographic key, e.g. deliver a key. The Function code data element shall be used to indicate the type of key management activity required.
- A network management advice response message (834) shall be sent in response to a network management advice message (824/825) to indicate receipt of the network management advice message (824/825).

Key management message type identifiers

Table E.36 defines the network management message type identifiers that may be used in key management.

Table E.36 — Key management message type identifier

MTI	Message	Purpose	From	To	Usage
804	Network management request	Request a key management activity	Sender	Receiver	
805	Network management request repeat				
814	Network management request response	Carries the answer to a network management request message	Receiver	Sender	Shall be sent in response to a 804 or 805
824	Network management advice	Advises of a key management activity	Sender	Receiver	
825	Network management advice repeat				
834	Network management advice response	Carries the answer to a network management advice message	Receiver	Sender	Shall be sent in response to a 824 or 825

Key management mandatory and conditional data elements

Table E.37 lists the mandatory and conditional data elements used in network management messages when used in support of key management. The condition codes are defined in Table E.1.

Table E.37 — Key management mandatory and conditional data elements

Network management messages		Message type identifiers			
Bit	Data element name	804 805	814	824 825	834
1	(see 4.3 for usage)				
7	Date and time transmission	30	30	30	30
11	Systems trace audit number	M	ME	M	ME
12	Date and time local transaction	M	ME	M	ME
18	Message error indicator		36		36
24	Function code	M		M	
25	Message reason code	M		M	
33	Forwarding institution identification code	10	10	10	10

39	Action code		M		M
50	Encryption data	47	48	47	
53	Security related information	46		46	
59	Transport data		16		16
93	Transaction destination institution identification code	M	ME	M	ME
94	Transaction originator institution identification code	M	ME	M	ME
96	Key management data		35	35	
100	Receiving institution identification code	19	19	19	19

Key management message flows

Figure E.22 shows the sequence of network management messages that may flow in support of key management.

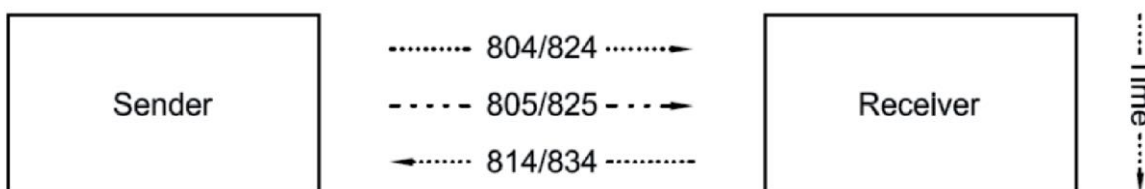


Figure E.22 — Key management message flows

Batch transfer

Batch transfer description

The definitions of request and advice messages in this document require a specific response to each request or advice sent. This is inefficient where the acquirer, without recourse to the card issuer, has completed transactions and now wishes to inform the card issuer of the results.

Batch transfer allows transaction details to be sent as a series of notification or instruction messages without requiring a response message for every message sent. Control is maintained by the use of notification or instruction acknowledgement messages, which may be sent periodically, within the transmission of a batch.

The same technique can be employed between the card issuer and acquirer where the card issuer is required to send individual messages, such as chargeback messages, without the need for an individual response to each one.

Batch transfer message rules

The following applies to batch transfer messages:

- a) Each batch in a batch transfer shall begin and end with a network management message containing the appropriate Function code and Batch/file transfer control data data element.
- b) A batch shall consist of notification or instruction messages with an optional reconciliation transaction.
- c) The Batch/file transfer message number sub-element of Batch/file transfer message control within each message in a batch provides a unique message sequence number within the batch.
- d) Additional requirements for the sequencing of messages within a batch are left to bilateral agreement.

Batch transfer message type identifiers

There are no specific message types needed to support batch transfer. Batch transfer is achieved by the use of existing message types and a number of specific data elements defined to support this activity. Details of these specific data elements and the rules for their usage are given in E.19.4.

Batch transfer mandatory and conditional data elements

General

The relevant mandatory and conditional data elements of any message type which is used in batch transfer applies.

Because in batch transfer there is not a mandatory requirement for a response to each message sent, there needs to be a method of control so that messages are not lost and transmission problems do not result in the need to resend messages that have been successfully sent. The following data elements are used to provide these controls.

Batch/file transfer message control

The Batch/file transfer message control data element shall be present in all notification, notification acknowledgement, instruction and instruction acknowledgement messages submitted as part of a batch transfer. It provides the unique message number and acknowledgement control for the message. This data element consists of two sub-elements:

- a) notification or Instruction messages (see E.19.4.2.1);
- b) notification acknowledgement and Instruction acknowledgement messages (see E.19.4.2.2).

A list of values and definitions for sub-element 1 can be found in Table D.10.

Notification or Instruction messages

In notification or instruction messages:

- a) Sub-element 1 (Batch/file transfer acknowledgement code) indicates whether the sender requires an acknowledgement from the receiver. When this sub-element indicates “acknowledgement required,” the sender shall not transmit any other notification or instruction

message before receiving a notification acknowledgement or instruction acknowledgement message.

- b) Sub-element 2 (Batch/file transfer message sequence number) provides the unique sequence number assigned to the message within the batch.

Notification acknowledgement or Instruction acknowledgement messages

In notification acknowledgement or instruction acknowledgement messages:

- a) Sub-element 1 (Batch/file transfer acknowledgement code) indicates whether acknowledgement from the receiver is positive or negative.
- b) Sub-element 2 (Batch/file transfer message sequence number) indicates to the sender the last message number correctly received by the receiver.
- c) If an expected acknowledgement message is not received, the sender shall resend the instruction or notification message without change.

Batch/file transfer control data

The Batch/file transfer control data element shall be present in network management request, request response, notification messages and notification acknowledgement messages that denote the start and end of a batch. It provides the batch identification and number of messages in the batch. This data element consists of two sub-elements.

- a) Sub-element 1 (Batch/file transfer message count) indicates the total number of notification or instruction messages to be transmitted for this batch. This count does not include network management messages or reconciliation messages. A value of all nines in this sub-element when used in the network management message that starts the batch indicates that the sender will provide the actual count in this sub-element within Batch/file transfer control data in the network management message that ends the batch.
- b) Sub-element 2 (Batch/file transfer file identification) provides the unique identifier assigned to the batch being sent.

Batch transfer message flows

Figure E.23 shows the sequence of messages that may flow in support of an acquirer-initiated batch transfer and Figure E.24 shows the sequence of messages that may flow in support of a card-issuer-initiated batch transfer. To avoid overcomplicating the figures, only a limited number of message types are shown. In practice, any defined notification message type may be included in a batch transfer.

Batch transfer examples

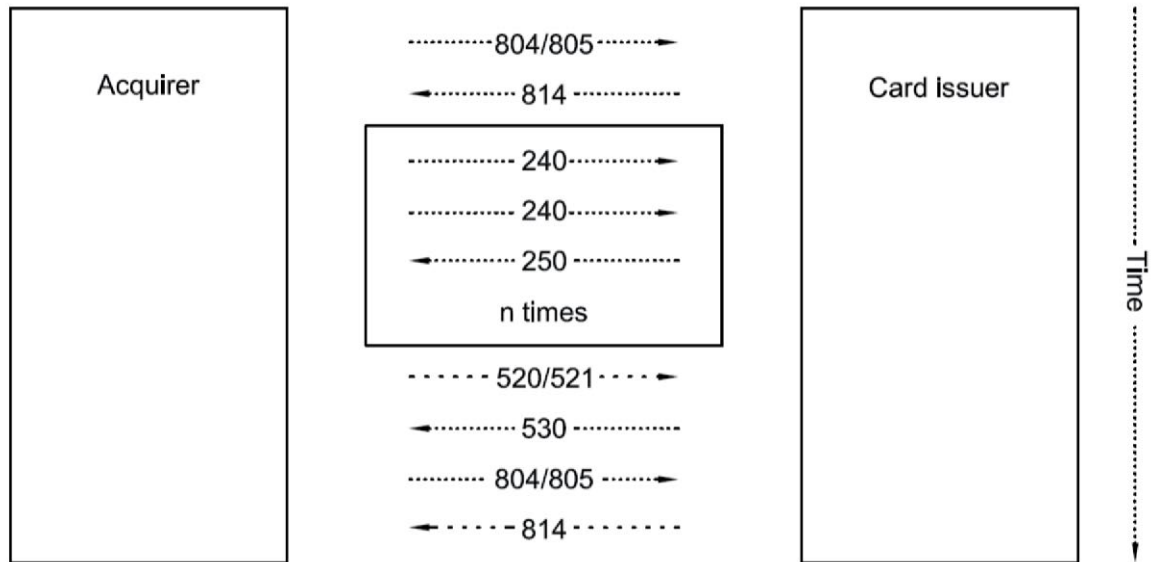


Figure E.23 — Acquirer-initiated batch transfer message flows

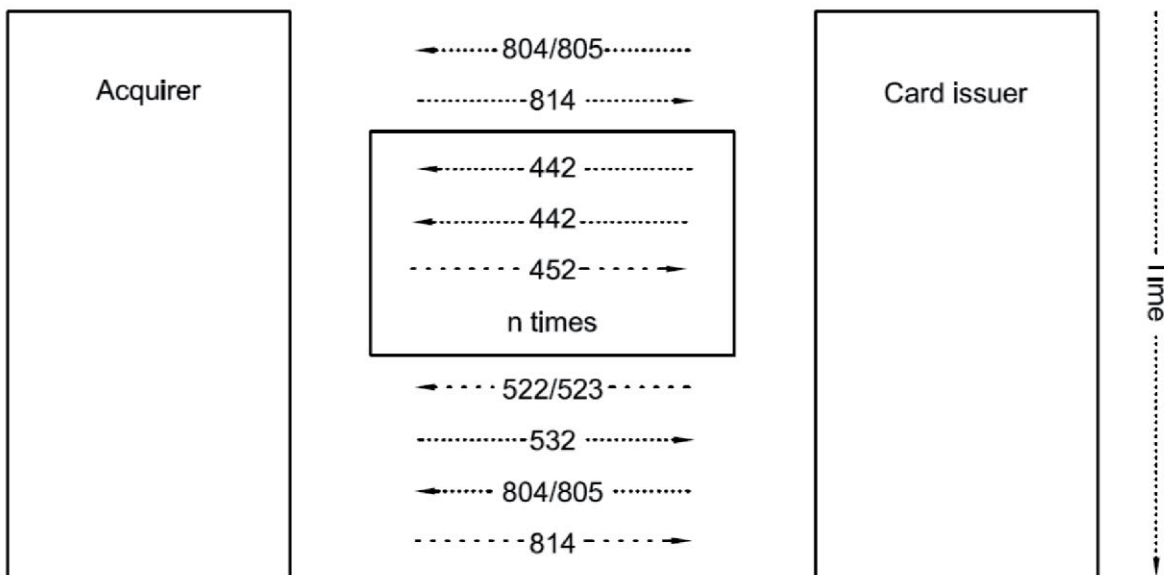


Figure E.24 — Card-issuer-initiated batch transfer message flows

See Annex G for additional examples.

File transfer

File transfer description

Although batch transfer (see E.19) improves the efficiency of exchanging data, there are situations where institutions may wish to transfer larger volumes of data in the minimum number of messages.

File transfer consists of the submission of a group of file action messages (3xx) in which the Data record data element contains data from a number of business transactions. The data contained in the Data record data element may or may not be based on message types identified in this document. The structure of the Data record data element is subject to bilateral agreement.

This document defines a file as “a collection of Data record data elements” and a Data record data element as “other data required to be passed in order to support an administrative activity or file action”. Therefore, a file transfer is a series of 3xx messages where the total number of such messages constitutes a file.

These definitions do not, however, adequately define what is contained within an individual Data record data element. The Data record data element is a variable length data element of considerable length where details of several business transactions can be carried.

To facilitate interchange, the details of a single business transaction are defined as being contained in a single elementary data record. The structure of an elementary data record is subject to bilateral agreement. Thus, a file of business transactions is split up and sent as a number of elementary data records contained in the Data record data element in the minimum number of 3xx messages needed.

In order that the recipient of such a file of 3xx messages can extract the individual elementary data records from each 3xx message, the File transfer description data data element is used to advise the recipient of the file size and number of elementary data records being sent. The length of each elementary data record may vary and may be defined as part of the structure of the elementary data record, which is subject to bilateral agreement.

File transfer message rules

The following applies to file transfer messages:

- a) Each file in a file transfer shall begin and end with a network management transaction (804/805 or 844) containing the appropriate Function code and Batch/file transfer control data and File transfer description data data elements.
- b) A file shall consist of 3xx file action notification or instruction messages.
- c) File action messages sent by the acquirer to the card issuer shall be notification messages.
- d) File action messages sent by the card issuer to acquirer shall be instruction messages.
- e) File action messages sent from sender to receiver (parties other than the card issuer or acquirer) may be either notification or instruction messages.
- f) The Batch/file transfer message number sub-element of Batch/file transfer message control within each message in a file provides a unique message sequence number within the file.

File transfer message type identifiers

File transfer uses the file action message types to send files. The specific requirements are defined in Annex E.9. File transfer uses a number of specific data elements to support this activity. Details of these specific data elements and the rules of their usage are given in E.20.4.

File transfer mandatory and conditional data elements

General

The relevant mandatory and conditional data elements of any message type which is used in batch transfer applies, as do the conditions defined in E.9.

Because in file transfer there is not a mandatory requirement for a response to each message sent, there needs to be a method of control so that messages are not lost and transmission problems do not result in the need to resend messages that have been successfully sent. The following data elements are used to provide these controls.

Batch/file transfer message control

The Batch/file transfer message control data element provides the unique message number and acknowledgement control for the message. Its use in file transfer is identical to its use in batch transfer (see E.19.4.2 for more information).

Batch/file transfer control data

The Batch/file transfer control data data element shall be present in network management messages that denote the start and end of the file. It shall also be present in each 3xx file action message within a file. This data element consists of two sub-elements:

- a) Sub-element 1 (Batch/file transfer message count) indicates the number of 3xx file action messages to be transmitted in this file. A value of all nines in this sub-element when used in a network management message that starts the file indicates that the sender will provide the actual count in this sub-element in the network management message that ends the file.
- b) Sub-element 2 (Batch/file transfer file identification) provides the unique identifier assigned to the file being sent.

File transfer description data

The File transfer description data data element is used only in file transfer messages. It shall be present in 8xx network management and 3xx file action messages that are submitted as part of a file transfer. It provides the size of the file to be sent, the total number of elementary data records in the file and the number of elementary data records that remain to be transferred.

This data element consists of three sub-elements:

- a) Sub-element 1 (File transfer file size) provides the total length in bytes of the elementary data records in the file to be sent. A value of zero (0) in this sub-element indicates that the length of the file is irrelevant.

- b) Sub-element 2 (File transfer elementary data record count) indicates the total number of elementary data records in the file to be sent.
- c) Sub-element 3 (File transfer remaining data record count) indicates the remaining number of elementary data records in the file to be sent.

File transfer message flows

Figure E.25 shows the sequence of messages that may flow in support of an acquirer-initiated file transfer and Figure E.26 shows the sequence of messages that may flow in support of a card-issuer-initiated file transfer.

File transfer examples

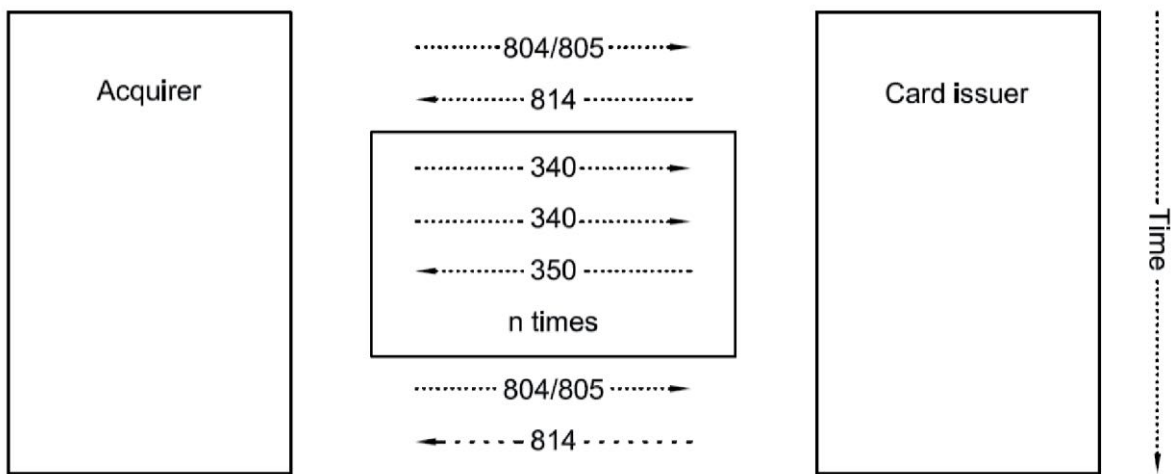


Figure E.25 — Acquirer-initiated file transfer message flows

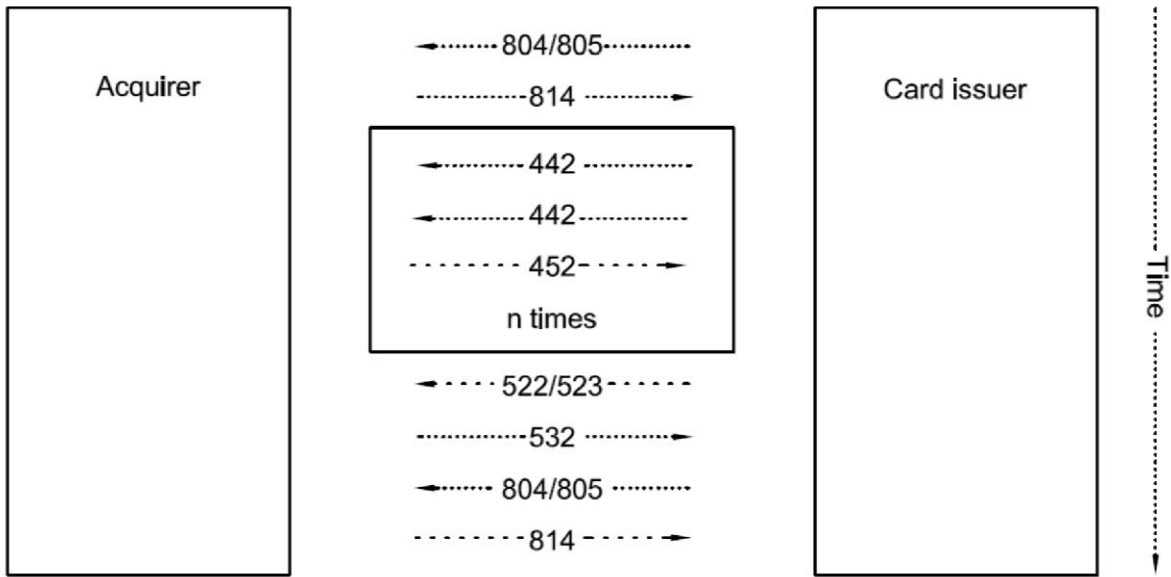


Figure E.26 — Card-issuer-initiated file transfer message flows

See Annex H for examples.