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**Bank card originated messages — Interchange
message specifications — Content for financial
transactions**

Messages initiés par carte bancaire — Spécifications d'échange de messages — Contenu pour les transactions financières

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Bank card originated messages — Interchange message specifications — Content for financial transactions

0 Introduction

Services of the financial industry include the exchange of electronic messages relating to financial transactions. Agreements on applications specifications are generally at a private level. This International Standard is designed as an interface specification enabling messages to be exchanged between systems adopting a variety of applications specifications. The application specification can remain at private level. Designers of such applications have complete design freedom within the overall constraint that messages must be convertible to the interface format in order that international interchange may take place.

This International Standard uses a concept called bit map, whereby each data element is assigned a position indicator in a control field, or bit map. The presence of a data element in a specific message is indicated by a one in the assigned position; the absence of a data element is indicated by a zero in the assigned position.

Message formats used in individual systems are subject to the commercial relationships between the parties contracting to each system. The data formats specified in this International Standard are designed to ensure that compatibility between systems conforming to this International Standard is always feasible.

1 Scope and field of application

This International Standard specifies a common interface by which bank card originated messages relating to a financial transaction may be interchanged between private systems. It specifies message structure, format and content, data elements and values for data elements.

The data elements and terminology used in this International Standard are derived from ISO 7580. Only those data elements shown in table 1 are incompatible with ISO 7580.

Table 1 — Incompatibilities between this International Standard and ISO 7580

Data element	ISO 7580	ISO 8583
Additional data — ISO	n .. 132	n .. 999
Additional response data	n .. 14	n .. 25
Amount, net settlement	n .. 12	x + n .. 16
Amount, settlement	n .. 8	n .. 12
Amount, transaction	n .. 8	n .. 12
Credits, gross amount	n .. 12	n .. 16
Credits, reversal gross amount	n .. 12	n .. 16
Debits, gross amount	n .. 12	n .. 16
Debits, reversal gross amount	n .. 12	n .. 16

Additionally, Date, Transmission and Transmission time have been consolidated into Transmission date and time; Requesting organization identification is identified as Forwarding institution identification code; Card issuer identification code is derived from Primary account number or Primary account number extended; and Message security key is identified as File security code.

2 References

- ISO 3166, *Codes for the representation of names of countries*.
- ISO 4217, *Codes for the representation of currencies and funds*.
- ISO 4909, *Bank cards — Magnetic stripe data content for track 3*.
- ISO 7580, *Identification cards — Card originated messages — Content for financial transactions*.¹⁾
- ISO 7810, *Identification cards — Physical characteristics*.

1) At present at stage of draft.

ISO 7811, *Identification cards — Recording technique*

- *Part 1: Embossing.*
- *Part 2: Magnetic stripe.*
- *Part 3: Location of embossed characters on ID-1 cards.*
- *Part 4: Location of read-only magnetic track — Tracks 1 and 2.*
- *Part 5: Location of read-write magnetic track — Track 3.*

ISO 7812, *Identification cards — Numbering system and registration procedure for issuer identification.*

ISO 7813, *Identification cards — Financial transaction cards.*

3 Definitions

For the purpose of this International Standard the following definitions apply.

3.1 acquirer: Financial institution (or its agent) which acquires from the card acceptor the data relating to the transaction and initiates that data into an interchange system.

3.2 advice: Message which notifies a party of an action that has been taken, requiring no approval.

3.3 authorization: The approval or guarantee given by the card issuer to the acquirer (and/or card acceptor).

3.4 card acceptor: Party accepting the card and presenting transaction data to an acquirer.

3.5 cardholder: Customer associated with the primary account number requesting the transaction form the card acceptor.

3.6 cardholder accounts transfer: The movement of funds by a cardholder from one of his accounts to another of his accounts both of which are held by the same financial institution.

3.7 card issuer: Institution (or its agent) which issues the identification card to the cardholder.

3.8 credit transaction: A claim for funds by the cardholder for the credit of his account. At the same time it provides details of funds acknowledged as payable by the acquirer (and/or the card acceptor) to the card issuer.

3.9 debit transaction: An approval by the cardholder of the debit to his account. At the same time it provides a claim of funds made by the acquirer (and/or the card acceptor) against the card issuer.

3.10 interactive message: Message to be transmitted and responded to while the transaction is taking place.

3.11 intermediate network facility: Any message processing entity positioned between the acquirer and the issuer.

3.12 message: A set of data elements used to exchange information between institutions (or their agents). No communications (header/trailer, protocol, or character code) or security implications are assumed or identified.

3.13 non-interactive message: Message transmitted after the transaction has taken place and where there is no urgency implied for the response. On-line telecommunication methods may be used for message transmission or off-line message transmission may be used (e.g. magnetic tape).

3.14 point of service (POS): Location where transaction is originated.

3.15 processing fee: A cost associated with the handling and routing of messages not relating to either cardholder service or equipment (e.g. ATM usage charges).

3.16 request: Message originating an interactive series of messages.

3.17 reversal: A message informing the sender of the original message that the message cannot be processed as instructed, i.e. is undeliverable, unprocessable or cancelled by the receiver.

3.18 reversal credit: A credit arising from the reversal of a previous debit.

3.19 reversal debit: A debit arising from the reversal of a previous credit.

3.20 reversal transfer: A debit and credit arising from the reversal of a previous transfer.

3.21 routing: The directional flow of messages by which the acquirer and card issuer communicate with each other directly or via (an) intermediate network facility(ies) which may act as agent(s) for the original parties involved in the message flow.

3.22 settlement: A transfer of funds to complete one or more prior transactions made, subject to final accounting.

3.23 settlement institution: Financial institution (or its agent) accepting responsibility for reimbursing the acquirer, card issuer or intermediate network facility for an approved financial transaction.

3.24 transaction: A collection of related messages designed to complete (insofar as this is possible) the intention of the initiator of the original message, and normally concluded by a debit or credit transaction. Amendments or reversals carried out subsequently are to be considered as a separate transaction set.

3.25 transaction fee: A fee charged (for example by the acquirer) for transaction activity.

4 Message structure

Each message identified in this International Standard is constructed in the following sequence: message type identifier (see 4.1), one or more bit maps (see 4.2), and a series of data elements in the order of the bit map representation (see 4.3). Clause 5 reflects each message and its interrelationship with other messages.

4.1 Message type identifier

A four-digit numeric field describing each message class and function. Every message shall start with a message type identifier.

4.1.1 Structure of the message type identifier

Digits one and two identify the class of message:

00XX	Reserved for ISO use
01XX	Authorization messages
02XX	Financial transaction messages
03XX	File update messages
04XX	Reversal messages
05XX	Reconciliation control messages
06XX	Administrative messages
07XX	Reserved for ISO use
08XX	Network management messages
09XX-79XX	Reserved for ISO use
80XX-89XX	Reserved for national use
90XX-99XX	Reserved for private use

When digits one and two range between 01 and 08 digits three and four represent the message function and the transmission mode. Digits three and four are valued at:

00-19	Transaction processed, interactive
20-39	Transaction processed, non-interactive
40-59	Reserved for ISO use
60-79	Reserved for national use
80-99	Reserved for private use

4.1.2 Message repeats

In 4.1.3 whenever a repeat message is identified that repeat message is identical to its original message with the single exception of the message type identifier.

4.1.3 Description of message type identifier

4.1.3.1 Authorization messages

0100	Authorization request
0101	Authorization request repeat

Routing : From acquirer to card issuer
Type : Interactive

Purpose: Requests approval authorization or guarantee for a transaction to proceed. It is not intended to permit the application of this transaction to the cardholder's account for the purpose of issuing a bill or statement.

An 0110 Authorization request response is required.

0102	Authorization completion confirmation
0103	Authorization completion confirmation repeat

Routing : From acquirer to card issuer
Type : Interactive
Purpose: May be sent after receipt of an 0110 Authorization request response to indicate that the authorization actions specified by the 0110 have been completed.

An 0112 Authorization completion response may be sent in reply to an 0102 Authorization completion confirmation and shall be sent in reply to an 0103 Authorization completion confirmation repeat.

0110 Authorization request response

Routing : From card issuer to acquirer
Type : Interactive
Purpose: Shall be sent in response to either an 0100 Authorization request or an 0101 Authorization request repeat and carries the answers to that request.

0112 Authorization completion response

Routing : From card issuer to acquirer
Type : Interactive
Purpose: May be sent to indicate receipt of an 0102 Authorization completion confirmation and shall be sent to indicate receipt of an 0103 Authorization completion confirmation repeat.

0120 Authorization advice

0121 Authorization advice repeat

Routing : From acquirer to card issuer
Type : Non-interactive
Purpose: Advises of an authorization carried out on behalf of the card issuer. It is not intended to permit application of this transaction to the cardholder's account for the purpose of issuing a bill or statement.

An 0130 Authorization advice response may be sent in reply to an 0120 Authorization advice message and shall be sent in reply to an 0121 Authorization advice repeat.

0122 Authorization advice completion confirmation

0123 Authorization advice completion confirmation repeat

Routing : From acquirer to card issuer
Type : Non-interactive
Purpose: May be sent after receipt of an 0130 Authorization advice response to indicate that the authorization actions specified by the 0130 have been completed in a successful, partially successful, or unsuccessful manner.

An 0132 Authorization advice completion response may be sent in reply to an 0122 Authorization advice completion confirmation and shall be sent in reply to an 0123 Authorization advice completion confirmation repeat.

0130 Authorization advice response	0220 Financial transaction advice 0221 Financial transaction advice repeat
<p>Routing: From card issuer to acquirer</p> <p>Type: Non-interactive</p> <p>Purpose: May be sent to indicate receipt of an 0120 Authorization advice and shall be sent in reply to an 0121 Authorization advice repeat.</p>	<p>Routing: From acquirer to card issuer</p> <p>Type: Non-interactive</p> <p>Purpose: Advises of a previously completed financial transaction message to be applied to the cardholder's account for billing or statement purposes.</p>
0132 Authorization advice completion response	An 0230 Financial transaction advice response may be sent in reply to an 0220 Financial transaction advice and shall be sent in reply to an 0221 Financial transaction advice repeat.
<p>Routing: From card issuer to acquirer</p> <p>Type: Non-interactive</p> <p>Purpose: May be sent to indicate receipt of an 0122 Authorization advice completion confirmation and shall be sent to indicate receipt of an 0123 Authorization advice completion confirmation repeat.</p>	<p>0222 Financial transaction advice completion confirmation 0223 Financial transaction advice completion confirmation repeat</p>
<p>4.1.3.2 Financial transaction messages</p> <p>0200 Financial transaction request 0201 Financial transaction request repeat</p> <p>Routing: From acquirer to card issuer</p> <p>Type: Interactive</p> <p>Purpose: Requests approval for a transaction, which if approved can be immediately applied to the cardholder's account for billing or statement purposes.</p> <p>An 0210 Financial transaction request response is required.</p>	<p>Routing: From acquirer to card issuer</p> <p>Type: Non-interactive</p> <p>Purpose: May be sent after receipt of an 0230 Financial transaction advice response to indicate that the transaction was completed in a successful, partially successful, or unsuccessful manner.</p> <p>An 0232 Financial transaction advice completion response may be sent in reply to an 0222 Financial transaction advice completion confirmation and shall be sent in reply to an 0223 Financial transaction advice completion confirmation repeat.</p>
<p>0202 Financial transaction completion confirmation 0203 Financial transaction completion confirmation repeat</p> <p>Routing: From acquirer to card issuer</p> <p>Type: Interactive</p> <p>Purpose: May be sent after receipt of an 0210 Financial transaction request response to indicate that the transaction was completed in a successful, partially successful, or unsuccessful manner.</p> <p>An 0212 Financial transaction completion response may be sent in reply to an 0202 Financial transaction completion confirmation and shall be sent in reply to an 0203 Financial transaction completion confirmation repeat.</p>	<p>0230 Financial transaction advice response</p> <p>Routing: From card issuer to acquirer</p> <p>Type: Non-interactive</p> <p>Purpose: May be sent to indicate receipt of an 0220 Financial transaction advice and shall be sent to indicate receipt of an 0221 Financial transaction advice repeat.</p>
0210 Financial transaction request response	<p>0232 Financial transaction advice completion response</p> <p>Routing: From card issuer to acquirer</p> <p>Type: Non-interactive</p> <p>Purpose: May be sent to indicate receipt of an 0222 Financial transaction advice completion confirmation and shall be sent to indicate receipt of an 0223 Financial transaction advice completion confirmation repeat.</p>
<p>Routing: From card issuer to acquirer</p> <p>Type: Interactive</p> <p>Purpose: Shall be sent in response to either an 0200 Financial transaction request or an 0201 Financial transaction request repeat and carries the answer to that request. An approval initiates the updating of settlement or reconciliation controls between the acquirer and card issuer.</p>	<p>4.1.3.3 File update messages</p> <p>0300 Acquirer file update request</p>
<p>0212 Financial transaction completion response</p> <p>Routing: From card issuer to acquirer</p> <p>Type: Interactive</p> <p>Purpose: May be sent to indicate receipt of an 0202 Financial transaction completion confirmation and shall be sent to indicate receipt of an 0203 Financial transaction completion confirmation repeat.</p>	<p>Routing: From acquirer to card issuer</p> <p>Type: Interactive</p> <p>Purpose: Contains instructions to add, change, delete or replace a file or record.</p> <p>An 0310 Acquirer file update request response is required.</p>

0302	Card issuer file update request	Purpose: Reverses (partially or wholly) an earlier authorization or transaction. An 0410 Acquirer reversal request response shall be sent in reply to this message.
	Routing : From card issuer to acquirer Type : Interactive Purpose: Contains instructions to add, change, delete or replace a file or record. An 0312 Card issuer file update request response is required.	
0310	Acquirer file update request response	
	Routing : From card issuer to acquirer Type : Interactive Purpose: Shall be sent in response to an 0300 Acquirer file update request and denotes the result of that message.	
0312	Card issuer file update request response	
	Routing : From acquirer to card issuer Type : Interactive Purpose: Shall be sent in response to an 0302 Card issuer file update request and denotes the result of that message.	
0320	Acquirer file update advice	
	Routing : From acquirer to card issuer Type : Non-interactive Purpose: Contains instructions to add, change, delete or replace a file or record. An 0330 Acquirer file update advice response may be sent in reply to this message.	
0322	Card issuer file update advice	
	Routing : From card issuer to acquirer Type : Non-interactive Purpose: Contains instructions to add, change, delete or replace a file or record. An 0332 Card issuer file update advice response may be sent in reply to this message.	
0330	Acquirer file update advice response	
	Routing : From card issuer to acquirer Type : Non-interactive Purpose: May be sent in response to an 0320 Acquirer file update advice and denotes the result of that message.	
0332	Card issuer file update advice response	
	Routing : From acquirer to card issuer Type : Non-interactive Purpose: May be sent in response to an 0322 Card issuer file update advice and denotes the result of that message.	
4.1.3.4 Reversal messages		
0400	Acquirer reversal request	
0401	Acquirer reversal request repeat	
	Routing : From acquirer to card issuer or intermediate network facility Type : Interactive	
0402	Card issuer reversal request	
0403	Card issuer reversal request repeat	
	Routing : From card issuer to acquirer Type : Interactive Purpose: Reverses (partially or wholly) an earlier authorization or transaction. An 0412 Card issuer reversal request response shall be sent in reply to this message.	
0410	Acquirer reversal request response	
	Routing : From card issuer to acquirer Type : Interactive Purpose: Shall be sent in response to an 0400 Acquirer reversal request or 0401 Acquirer reversal request repeat, and denotes the disposition of that message.	
0412	Card issuer reversal request response	
	Routing : From acquirer to card issuer Type : Interactive Purpose: Shall be sent in response to an 0402 Card issuer reversal request or 0403 Card issuer reversal request repeat and denotes the disposition of that message.	
0420	Acquirer reversal advice	
0421	Acquirer reversal advice repeat	
	Routing : From acquirer to card issuer Type : Non-interactive Purpose: Reverses (partially or wholly) an earlier authorization or transaction. An 0430 Acquirer reversal advice response may be sent in reply to an 0420 Acquirer reversal advice message and shall be sent in reply to an 0421 Acquirer reversal advice repeat.	
0422	Card issuer reversal advice	
0423	Card issuer reversal advice repeat	
	Routing : From card issuer to acquirer Type : Non-interactive Purpose: Reverses (partially or wholly) an earlier authorization or transaction. An 0432 Card issuer reversal advice response may be sent in reply to an 0422 Card issuer reversal advice and shall be sent in reply to an 0423 Card issuer reversal advice repeat.	
0430	Acquirer reversal advice response	
	Routing : From card issuer to acquirer Type : Non-interactive Purpose: May be sent in response to an 0420 Acquirer reversal advice and shall be sent in response to a 0421 Acquirer reversal advice repeat and denotes the disposition of that message.	

0432 Card issuer reversal advice response

Routing : From acquirer to card issuer

Type : Non-interactive

Purpose: May be sent in response to an 0422 Card issuer reversal advice and shall be sent in response to an 0423 Card issuer reversal advice repeat and denotes the disposition of that message.

4.1.3.5 Reconciliation control messages

0500 Acquirer reconciliation request

0501 Acquirer reconciliation request repeat

Routing : From acquirer to card issuer

Type : Interactive

Purpose: Requests confirmation of acquirer totals (number and value) since last 0500 Acquirer reconciliation request, in order to effect settlement between the parties.

An 0510 Acquirer reconciliation request response shall be sent in reply to this message.

0502 Card issuer reconciliation request

0503 Card issuer reconciliation request repeat

Routing : From card issuer to acquirer

Type : Interactive

Purpose: Request confirmation of card issuer totals (number and value) since last 0502 Card issuer reconciliation request, in order to effect settlement between the parties.

An 0512 Card issuer reconciliation request response shall be sent in reply to this message.

0510 Acquirer reconciliation request response

Routing : From card issuer to acquirer

Type : Interactive

Purpose: Shall be sent in response to an 0500 Acquirer reconciliation request or 0501 Acquirer reconciliation request repeat and denotes the disposition of, or answers, that message.

0512 Card issuer reconciliation request response

Routing : From acquirer to card issuer

Type : Interactive

Purpose: Shall be sent in response to an 0502 Card issuer reconciliation request or 0503 Card issuer reconciliation request repeat and denotes the disposition of, or answers, that message.

0520 Acquirer reconciliation advice

0521 Acquirer reconciliation advice repeat

Routing : From acquirer to card issuer

Type : Non-interactive

Purpose: Advises of totals (number and value) since last 0520 Acquirer reconciliation advice, in order to effect settlement between the parties.

An 0530 Acquirer reconciliation advice response may be sent in reply to an 0520 Acquirer reconciliation advice and shall be sent in reply to an 0521 Acquirer reconciliation advice repeat.

0522 Card issuer reconciliation advice

0523 Card issuer reconciliation advice repeat

Routing : From card issuer to acquirer

Type : Non-interactive

Purpose: Advises of totals (number and value) since last 0522 Card issuer reconciliation advice, in order to effect settlement between the parties.

An 0532 Card issuer reconciliation advice response may be sent in reply to an 0522 Card issuer reconciliation advice and shall be sent in reply to an 0523 Card issuer reconciliation advice repeat.

0530 Acquirer reconciliation advice response

Routing : From card issuer to acquirer

Type : Non-interactive

Purpose: May be sent in response to an 0520 Acquirer reconciliation advice and shall be sent in response to a 0521 Acquirer reconciliation advice repeat and denotes the disposition of, or answers, that message.

0532 Card issuer reconciliation advice response

Routing : From acquirer to card issuer

Type : Non-interactive

Purpose: May be sent in response to an 0522 Card issuer reconciliation advice and shall be sent in response to an 0523 Card issuer reconciliation advice repeat and denotes the disposition of, or answers, that message.

4.1.3.6 Administrative messages

0600 Administrative request

0601 Administrative request repeat

Routing : Between any two communicating parties (acquirer, card issuer or intermediate network facility)

Type : Interactive

Purpose: Requests confirmation of data in a format other than identified in this International Standard.

An 0610 Administrative request response is required in reply.

0610 Administrative request response

Routing : From receiver to originator of related administrative request message

Type : Interactive

Purpose: Shall be sent in response to an 0600 Administrative request or 0601 Administrative request repeat message and denotes the disposition of that message.

0620 Administrative advice

0621 Administrative advice repeat

Routing : Between any two communicating parties (acquirer, card issuer or intermediate network facility)

Type : Non-interactive

Purpose: Transmits data in a format other than identified in this International Standard.

An 0630 Administrative advice response may be sent in reply to an 0620 Administrative advice and shall be sent in reply to an 0621 Administrative advice repeat.

0630 Administrative advice response

Routing: From receiver to originator of related administrative advice message

Type: Non-interactive

Purpose: May be sent in response to an 0620 Administrative advice and shall be sent in response to an 0621 Administrative advice repeat message and denotes the disposition of that message.

4.1.3.7 Network management messages

0800 Network management request

0801 Network management request repeat

Routing: Between any two communicating parties (acquirer, card issuer or intermediate network facility)

Type: Interactive

Purpose: To control the interchange network by supporting or describing system condition or system security.

An 0810 Network management request response is required in reply.

0810 Network management request response

Routing: From receiver to originator of related network management message.

Type: Interactive

Purpose: Shall be sent in response to an 0800 Network management request or 0801 Network management request repeat message and denotes the disposition of that message.

0820 Network management advice

0821 Network management advice repeat

Routing: Between any two communicating parties (acquirer, card issuer or intermediate network facility)

Type: Non-interactive

Purpose: To control the interchange network by supporting or describing system condition or system security.

An 0830 Network management advice response may be sent in reply to an 0820 Network management advice and shall be sent in reply to an 0821 Network management advice repeat.

0830 Network management advice response

Routing: From receiver to originator of related network management advice message

Type: Non-interactive

Purpose: May be sent in response to an 0820 Network management advice and shall be sent in response to an 0821 Network management advice repeat and denotes the disposition of that message.

4.2 Bit maps

The second message component is one or more bit map(s) consisting of 64 bits numbered from the left starting with "1". Each bit signifies the presence (1) or the absence (0) in the message of the data element associated with that particular bit.

The first bit within a bit map, when valued at (1), denotes the presence of an additional, contiguous bit map (see figure 1).

The primary bit map (bits 1-64) shall always be present, and the most frequently used data elements are indexed from these bit positions. Infrequently used data elements are indexed from the secondary bit map (bits 65-128). The presence of the secondary bit map is signified by a "1" in bit 01 (extended bit map) of the primary bit map.

Table 2 shows

- the data element assignment to each bit;
- the data element length and attribute specification as outlined in 4.3;
- the mandatory or conditional presence specification for each message type identifier. "M" signifies that the field is mandatorily present in that message. Conditional status is shown as "nn" which references table 3. If the condition identified in table 3 applies, then the field shall be present, otherwise its inclusion in a message is subject to bi-lateral agreement.

Nothing in table 2 prohibits the use of any data element within any message. Messages may include additional data elements to those specified as mandatory and/or conditional.

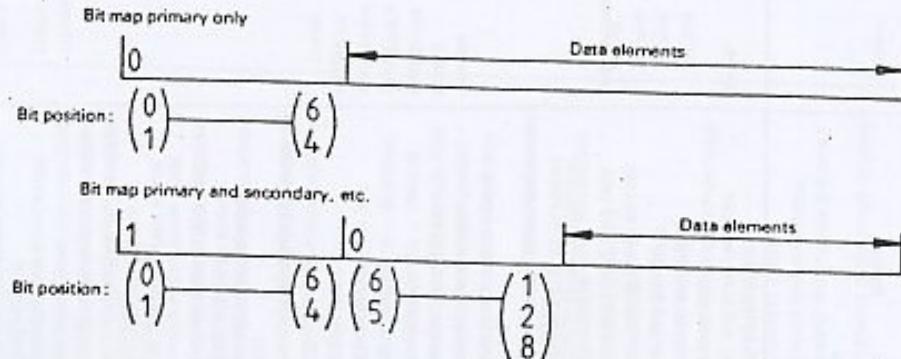


Figure 1

Table 2 – Bit map data elements – Assignments and usage in messages

Bit	Name	Format	Attribute	Message type Identifiers															
				0 0	0 1	1 0	1 1	2 0	2 1	2 2	3 0	3 1	3 2	3 3	3 4	4 0	4 1	4 2	5 0
36	TRACK 2 DATA	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
36	TRACK 3 DATA	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
37	RETRIEVAL REFERENCE NUMBER	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
38	AUTHORIZATION IDENTIFICATION RESPONSE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
39	RESPONSE CODE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
40	SERVICE RESTRICTION CODE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
41	CARD ACCEPTOR TERMINAL IDENTIFICATION	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
42	CARD ACCEPTOR IDENTIFICATION CODE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
43	CARD ACCEPTOR NAME/LOCATION	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
44	ADDITIONAL RESPONSE DATA	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
45	TRACK 1 DATA	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
46	ADDITIONAL DATA - ISO	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
47	ADDITIONAL DATA - NATIONAL	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
48	ADDITIONAL DATA - PRIVATE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
49	CURRENCY CODE, TRANSACTION	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
50	CURRENCY CODE, SETTLEMENT	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
51	CURRENCY CODE, CARDHOLDER BILLING	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
52	PERSONAL IDENTIFICATION NUMBER (PIN) DATA	b	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
53	SECURITY RELATED CONTROL INFORMATION	n	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
54	ADDITIONAL AMOUNTS	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
55-56	RESERVED ISO	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
57-59	RESERVED NATIONAL	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
60-63	RESERVED PRIVATE	LLVAR	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
64	MESSAGE AUTHENTICATION CODE FIELD	b	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0 0
65	BIT MAP, EXTENDED SETTLEMENT CODE	b	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
66	EXTENDED PAYMENT CODE	b	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
67	RECEIVING INSTITUTION COUNTRY CODE	b	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
68	SETTLEMENT INSTITUTION COUNTRY CODE	b	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
69		b	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3

II Attribute for each bit.

Table 2 – Bit map data elements – Assignments and usage in messages (concluded)

Bit	Name	Format	Message type identifier																				
			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
70	NETWORK MANAGEMENT INFORMATION CODE	n	3	M M M M	
71	MESSAGE NUMBER	n	4
72	MESSAGE NUMBER LAST	n	4
73	DATE, ACTION	a	6
74	CREDITS, NUMBER	n	10	YMMDD	M 13 M 13		
75	CREDITS, REVERSAL NUMBER	n	10	M 13 M 13		
76	DEBITS, NUMBER	n	10	M 13 M 13			
77	DEBITS, REVERSAL NUMBER	n	10	M 13 M 13				
78	TRANSFER NUMBER	n	10	M 13 M 13					
79	TRANSFER, REVERSAL NUMBER	n	10	M 13 M 13					
80	INQUIRIES, NUMBER	n	10	M 13 M 13					
81	AUTHORIZATIONS, NUMBER	n	10	M 13 M 13					
82	CREDITS, PROCESSING FEE AMOUNT	n	12	M 13 M 13					
83	CREDITS, TRANSACTION FEE AMOUNT	n	12	M 13 M 13					
84	DEBITS, PROCESSING FEE AMOUNT	n	12	M 13 M 13					
85	DEBITS, TRANSACTION FEE AMOUNT	n	12	M 13 M 13					
86	ORIGINAL DATA ELEMENTS	n	16	M 13 M 13					
87	CREDITS, AMOUNT	n	16	M 13 M 13					
88	DEBITS, AMOUNT	n	16	M 13 M 13					
89	DEBITS, REVERSAL AMOUNT	n	16	M 13 M 13					
90	ORIGINAL DATA ELEMENTS	n	42	M 13 M 13					
91	FILE UPDATE CODE	a	1	M .					
92	FILE SECURITY CODE	a	2	M .					
93	RESPONSE INDICATOR	a	5	M .					
94	SERVICE INDICATOR	a	7	M .					
95	REPLACEMENT AMOUNTS	a	42	M .					
96	MESSAGE SECURITY CODE	b	64	M .					
97	AMOUNT, NET SETTLEMENT PAYEE	a+n	16	M .					
98	SETTLEMENT INSTITUTION IDENTIFICATION CODE	LLVAR	17	M .					
99	RECEIVING INSTITUTION IDENTIFICATION CODE	LLVAR	11	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19		
100	ACCOUNT IDENTIFICATION 1	LLVAR	20	04 04 04 04 04					
101	ACCOUNT IDENTIFICATION 2	LLVAR	20	04 04 04 04 04					
102	TRANSACTION DESCRIPTION	LLVAR	100	M .					
103	RESERVED FOR ISO USE	LLVAR	99(1)	M .					
104	RESERVED FOR PRIVATE USE	LLVAR	99(1)	M .					
105-111	MESSAGE AUTHENTICATION FIELD	LLVAR	64	M .					
112-119	MESSAGE AUTHENTICATION CODE	LLVAR	64	M .					
120-127	MESSAGE AUTHENTICATION FIELD	LLVAR	64	M .					

1) Attribute for each bit.

Table 3 – Conditions used in table 2

Code	Condition
01	If an amount transaction fee is associated with an authorization financial transaction service to the card issuer, this field is required.
02	If available, data must be included in message.
03	Must contain the same data as the original authorization (01XX) or financial transaction (02XX) message.
04	If the data element was present in the original authorization (01XX) or financial transaction (02XX) message this field is mandatory.
05	Required when the settlement and transaction currencies differ.
06	Required when the reversal transaction is for an amount other than the original requested amount, transaction.
07	Mandatory if the primary account number conforms to International Standards ISO 7810, 7811, 7812, 7813 and 4900 except when the primary account number begins with the digits "59", then primary account number extended must be used.
08	If entered at a point-of-service, data must be included in message.
09	Required when the associated institution code starts with "59" (see 4.3.3).
10	Required when the forwarding institution is not the same as the acquirer.
11	Mandatory if the secondary bit map is present.
12	When making transfers these fields contain the "to" and "from" accounts.
13	Required if the settlement code is "2" or "3" (see 4.3.10).
14	Mandatory when PIN data is present in the message and the point of service device cannot accept the maximum PIN length (as defined by ISO/IEC 68/SC2/WG6).
15	To be used in place of the primary account number data element whenever the primary account number starts with "59".
16	If present in a request message it shall be present in the response message.
17	If previously authorized use the response code "00".
18	Mandatory if the authorization identification response is required to be less than six characters.
19	Required when the institution receiving the request message is not the same institution identified in either the primary account number or primary account number extended data elements.

4.3 Data elements

The third message component and its data content is made up of a series of data elements. Table 2 specifies those data elements which are present, according to the message type identifier.

Messages are reconstructed using the bit map as an index of data elements that are present. Some data elements are of fixed length; some of variable length. The actual length of any given variable length data element is provided in its fixed length prefix.

The message structure does not preclude the use of additional data elements in a message as required for national interchange or private use.

The following data elements in table 4 shall be used in the messages specified in table 2:

Column 1 contains the names of the data elements.

Column 2 contains the description of the data elements.

Column 3 contains specifications for the representation of the data elements and reference to any clauses which further qualify the data element.

Column 4 contains the bit map indicator (P = Primary, S = Secondary) and the bit position within that bit map in which the data elements are identified.

Legend for abbreviations used under attribute

a	= alphabetical characters
n	= numeric digits
s	= special characters
an	= alphabetic and numeric characters
as	= alphabetic and special characters
ns	= numeric and special characters
ans	= alphabetic, numeric and special characters
MM	= Month
DD	= Day
YY	= Year
hh	= Hour
mm	= Minute
ss	= Second
LL,LLL	= length of variable field that follows
VAR	= variable length field
3	= fixed length of three characters
..17	= variable length up to maximum 17 characters. All variable length fields will in addition contain two or three positions at the beginning of the field to identify the number of positions following to the end of that field.
x	= "C" for credit, "D" for debit and must always be associated with a numeric amount data element, i.e. x + n16 in amount, net settlement means prefix "C" or "D" and 16 digits of amount, net settlement.
b	= binary representation of data
z	= Tracks 2 and 3 code set as defined in ISO 7811 and ISO 7813.

NOTE – All fixed length "n" data elements are assumed to be right justified with leading zeroes. All other fixed length data elements are left justified with trailing blanks.

All fixed length "b" data elements are assumed to be left justified with trailing zeroes.

All data elements are counted from left to right, i.e. the leftmost position is number 1.

Table 4 — Data element directory

Name	Description	Representation	Bit map position
Account identification 1	Series of digits used to identify a customer account or relationship. Account identification 1 is primarily used for the "from" account in a transfer transaction.	ans..28 (see 4.3.1)	S-102
Account identification 2	A series of digits used to identify a customer account or relationship. Account identification 2 is primarily used for the "to" account in a transfer transaction.	ans..28 (see 4.3.1)	S-103
Acquirer institution country code	The code of the country where acquiring institution is located (see ISO 3166).	n 3 (see 4.3.3)	P-19
Acquiring institution identification code	Code identifying the acquiring institution (e.g. merchant bank) or its agent.	n..11 (see 4.3.1 and 4.3.3)	P-32
Additional amounts	Information on up to six amounts and related account data for which specific data elements have not been defined.	ans...120 (see 4.3.2 and 4.3.17)	P-54
Additional data — ISO	Data supplemental to that already conveyed in the specific data elements in the message.	ans...998 (see 4.3.2) The use of this field is under the control of ISO.	P-46
Additional data — national	Reserved for national organizations to define data unique to country applications.	ans...998 (see 4.3.2) The use of this field is under the control of national standard bodies.	P-47
Additional data — private	Reserved for private data unique to private institutions.	ans...998 (see 4.3.2) The use of this field is determined by bilateral agreement.	P-48
Additional response data	Other data (e.g. a telephone number required in response to an authorization or transaction request).	ans..25	P-44
Amount, cardholder billing	Amount billed to the cardholder in the currency of the cardholder account exclusive of cardholder billing fees.	n 12 (see 4.3.11)	P-6
Amount, cardholder billing fee	Fee to be billed to the cardholder by the card issuing institution in the same currency as amount cardholder billing.	n 8 (see 4.3.11)	P-8
Amount, net settlement	The net value of all gross amounts.	x + n 16 (see 4.3.11, 4.3.12 and 4.3.15)	S-97
Amount, settlement	Funds to be transferred between the acquirer and card issuer equal to the amount, transaction in the currency of settlement.	n 12 (see 4.3.11 and 4.3.15)	P-5
Amount, settlement fee	Fee to be transferred between the acquirer and card issuer equal to the amount, transaction fee in the currency of amount, settlement.	x + n 8 (see 4.3.11 and 4.3.15)	P-29
Amount, settlement processing fee	Fee charged by the acquirer, card issuer or intermediate network facility for the handling and routing of messages in the currency of amount, settlement.	x + n 8 (see 4.3.11 and 4.3.15)	P-31
Amount, transaction	Funds requested by the cardholder in the local currency of the acquirer or source location of the transaction, exclusive of amount, transaction fee.	n 12 (see 4.3.11 and 4.3.15)	P-4
Amount, transaction fee	Fee charged (e.g. by the acquirer) for transaction activity in the currency of amount, transaction.	x + n 8 (see 4.3.11 and 4.3.15)	P-28
Amount, transaction processing fee	Fee charged (e.g. by the acquirer, card issuer or intermediate network facility) for the handling and routing of messages in the currency of amount, transaction.	x + n 8 (see 4.3.11 and 4.3.15)	P-30

Table 4 — Data element directory (continued)

Name	Description	Representation	Bit map position
Authorization identification response	Response identification assigned by the authorizing institution.	n 6	P-38
Authorization identification response length	Maximum length of authorization response which the acquirer can accommodate. The card issuer or agent is expected to limit response to this length.	n 1	P-27
Authorizations, number	The sum number of authorization requests and authorization advice messages processed.	n 10 (see 4.3.12)	S-81
Bit map	A series of 64 bits used to identify the presence (denoted by 1) or absence (denoted by 0) of each data element.	See 4.2	None
Card acceptor identification code	Code identifying the card acceptor which defines the point of the transaction in both local and interchange environments.	ans 15	P-42
Card acceptor name/location	The name and location of the card acceptor which defines the point of service in both a local and interchange environment.	ans 40 Name, city, region (if required) and country. Positions 39 and 40 will contain the two-character country code as defined in ISO 3166.	P-43
Card acceptor terminal identification	Unique code identifying a terminal at the card acceptor location.	ans 8	P-41
Card sequence number	A number distinguishing between separate cards with the same primary account number or primary account number extended (see ISO 4909).	n 3	P-23
Conversion rate, cardholder billing	The factor used in the conversion from transaction to cardholder billing amount. The amount, transaction is multiplied by conversion rate, cardholder billing to determine amount, cardholder billing.	n 8 The leftmost digit denotes the number of positions the decimal separator shall be moved from the right. Position 2-8 is rate. e.g. 69972522 = 9,972522	P-10
Conversion rate, settlement	The factor used in the conversion from transaction to settlement amount. The amount, transaction is multiplied by conversion rate, settlement to determine amount, settlement.	n 8 The leftmost digit denotes the number of positions the decimal separator shall be moved from the right. Position 2-8 is rate. e.g. 69972522 = 9,972522	P-9
Credits, amount	The sum amount of all credit transactions processed transactions processed exclusive of any fees.	n 16 (see 4.3.11, 4.3.12 and 4.3.15)	S-86
Credits, transaction fee amount	The sum amount of all fees resulting from the processing of all credit transactions.	n 12 (see 4.3.11, 4.3.12 and 4.3.15)	S-83
Credits, number	The sum number of credit transactions processed.	n 10 (see 4.3.12)	S-74
Credits, processing fee amount	The sum amount of all processing fees associated with the handling and routing of credit transactions.	n 12 (see 4.3.11, 4.3.12 and 4.3.15)	S-82
Credits, reversal amount	The sum amount of reversal credits processed exclusive of any fees.	n 16 (see 4.3.11 and 4.3.12)	S-87
Credits, reversal number	The sum number of reversal credit transactions.	n 10 (see 4.3.12)	S-75

Table 4 - Data element directory (continued)

Name	Description	Representation	Bit map position
Currency code, cardholder billing	Code defining currency of amount, cardholder billing and amount, cardholder billing fee (see ISO 4217).	a 3 or n 3	P-51
Currency code, settlement	Code defining currency of amount, settlement and amount, settlement fee (see ISO 4217).	a 3 or n 3	P-50
Currency code, transaction	In reconciliation messages, this data element defines currency of all credit and debit amount data elements.	a 3 or n 3	P-49
Date, action	The local currency of the acquirer or source location of the transaction. Currency used in amount, transaction and amount, transaction fee (see ISO 4217).	n 6 YYMMDD	S-73
Date, capture	Six numeric, intended to enter a date specifying a time for a future action or a static time such as birthdate.	n 4 MMDD	P-17
Date, conversion	The month and day the conversion rate is effective to convert the transaction amount from the original to settlement currency.	n 4 MMDD	P-16
Date, expiration	The year and month after which the card expires.	n 4 YYMM	P-14
Date, local transaction	The local month and day the transaction takes place at the card acceptor location.	n 4 MMDD	P-13
Date, settlement	The month and day funds will be transferred between acquirer, and card issuer or any intermediate network facility.	n 4 MMDD	P-15
Debits, amount	The sum amount of all debit transactions processed exclusive of any fees.	n 16 (see 4.3.11, 4.3.12 and 4.3.15)	S-88
Debits, transaction fee amount	The sum amount of all fees resulting from the processing of all debit transactions.	n 12 (see 4.3.11, 4.3.12 and 4.3.15)	S-85
Debits, number	The sum number of debit transactions processed.	n 10 (see 4.3.12)	S-76
Debits, processing fee amount	The sum amount of all processing fees associated with the handling and routing of debit transactions.	n 12 (see 4.3.11, 4.3.12 and 4.3.15)	S-84
Debits, reversal amount	The sum amount of reversal debits processed exclusive of any fees.	n 16 (see 4.3.11 and 4.3.12)	S-89
Debits, reversal number	The sum number of debit reversal transactions.	n 10 (see 4.3.12)	S-77
Extended payment code	Number of months that the cardholder prefers to pay for this item if permitted by the card issuer.	n 2	S-67
File name	The actual or abbreviated name of the file being accessed.	ans ..17 (see 4.3.11)	S-101
File security code	A file update security code to indicate that the message originator is authorized to update the file.	an 2	S-92
File update code	Indication to the system maintaining the file which procedure to follow.	an 1 (see 4.3.4)	S-91
Forwarding institution country code	The code of the country where forwarding institution is located (see ISO 3166).	n 3 (see 4.3.3)	P-21
Forwarding institution identification code	The identity of the institution forwarding a request or advice message in an interchange system, if not the same institution as specified in the acquiring institution identification code.	n ..11 (see 4.3.1 and 4.3.3)	P-33
Inquiries, number	The sum number of inquiry (processing code 301 requests processed).	n 10 (see 4.3.12)	S-80

Table 4 — Data element directory (continued)

Name	Description	Representation	Bit map position
Merchant's type	The classification of the merchant's type of business product or service.	n 4 Codes to be developed within each country.	P-18
Message authentication code field (MAC)	Used to validate the source and the text of the message between the sender and receiver. The last bit position within any bit map shall be reserved for the MAC field. If authentication is to be used on a message, the MAC field will be represented by the final bit in the final bit map of that message. The final bit of all previous bit maps shall contain zero, i.e. only one MAC field per message and that MAC field shall be the last data element of the message. NOTE — Technique to be identified by ISO/TC 68.	b 64 For the purposes of this International Standard, the ISO 7580 definition of n 16 is considered to be 64 bits of data.	P-64 or S-128 etc.
Message number	A sequential, cyclic number assigned to a message by the message initiator and used to monitor the integrity and interchange.	n 4	S-71
Message number last	Same as message number.	n 4 Numbers shall not be all zeros. When first and last message numbers are used, this number is the first in the sequence.	S-72
Message security code	A verification between a card acceptor and a card issuer that a message is authorized to update or modify a special file.	b 64	S-96
Message type identifier	An identifier of the type of message being interchanged.	n 4 See 4.1	None
Network international identifier	Identifies a single international network of card issuer.	n 3	P-24
Network management information code	Used to identify network status. "Additional data" may be used in conjunction with this field.	n 3 (see 4.3.5)	S-70
Original data elements	The data elements contained in the original message, intended to identify a transaction for correction or reversal.	n 42 (see 4.3.6)	S-90
Payee	The third party beneficiary in a payment transaction.	ans 25	S-98
Personal identification number (PIN) data	A number assigned to a cardholder intended to uniquely identify that cardholder at the point of service. The use of the PIN is subject to bilateral agreement. The field may contain the PIN itself or a derivative.	b 64 For the purposes of this International Standard, the ISO 7580 definition of n 16 is considered to be 64 bits of data.	P-52
Point of service condition code	An identification of the condition under which the transaction takes place at the point of service.	n 2 (see 4.3.7)	P-25
Point of service entry mode	Two numerics to indicate the method by which primary account number was entered into the system and one numeric to indicate PIN entry capabilities.	n 3 (see 4.3.14)	P-22

Table 4 - Data element directory (continued)

Name	Description	Representation	Bit map position
Point of service PIN capture code	A code indicating the technique and/or maximum number of PIN characters accepted by the point of service device used to construct the personal identification number (PIN) data.	n 2 (see 4.3.16)	P-26
Primary account number (PAN)	A series of digits used to identify a customer account or relationship. When used in a reconciliation message, this identifies the account against which the settlement occurs.	n..19 (see 4.3.1)	P-2
Primary account number (PAN) extended	Used only when the primary account number begins with "58" and is used to identify a customer account or relationship. When used in a reconciliation message, this identifies the account against which the settlement occurs.	n..28 (see 4.3.1 and 4.3.3)	P-34
Primary account number (PAN) extended, country code	Code identifying the country where the card issuer institution is located (see ISO 3166).	n 3 (see 4.3.3)	P-20
Processing code	A series of digits used to describe the effect of a transaction on the customer account and the accounts affected.	n 6 (see 4.3.8)	P-3
Receiving institution country code	The code of the country where receiving institution is located (see ISO 3166).	n 3 (see 4.3.3)	S-68
Receiving institution identification code	The identity of the institution receiving a request or advice message in an interchange system if not the same as identified in primary account number or primary account number extended.	n..11 (see 4.3.1 and 4.3.3)	S-100
Replacement amounts	The new actual amount data elements, necessary to perform a partial or full reversal on a financial transaction.	an 42 (see 4.3.13)	S-96
Response code	A code which defines the disposition of a message.	an 2 (see 4.3.9)	P-39
Response indicator	An indication of the update action taken by the point of service system.	an 5 Values to be determined by agreement between interchange parties.	S-93
Retrieval reference number	A document reference supplied by the system retaining the original source document and used to assist in locating that document or a copy thereof.	an 12 Can include date of capture in MMDD sequence.	P-37
Security related control information	To be defined by ISO/TC 68.	n 16	P-53
Service indicator	Indication of the type of support service required by the recipient of the file update message. Used for co-ordination of file update messages.	an 7	S-94
Service restriction code	An identification of geographic/service availability.	an 3	P-40
Settlement code	A code indicating the result of a reconciliation request.	n 1 (see 4.3.10)	S-66
Settlement institution country code	The code of the country where settlement institution is located (see ISO 3166).	n 3 (see 4.3.3)	S-69
Settlement institution identification code	Code identifying settlement institution or its agent.	n..11 (see 4.3.1 and 4.3.3)	S-99
Systems trace audit number	A number assigned by a message initiator to identify uniquely a transaction. The trace number remains unchanged for all messages throughout the life of the transaction.	n 6	P-11
Time, local transaction	The local time at which the transaction takes place at the point of card acceptor location.	n 6 hhmmss	P-12
Track 1 data	The information encoded on track 1 of the magnetic stripe as defined in ISO 7813, including field separators but excluding beginning and ending sentinels and LRC characters as defined therein.	an..76 (see 4.3.1)	P-45

Table 4 — Data element directory (concluded)

Name	Description	Representation	Bit map position
Track 2 data	The information encoded on track 2 of the magnetic stripe as defined in ISO 7813, excluding beginning and ending sentinels and LRC characters as defined therein.	z..37 (see 4.3.1)	P-35
Track 3 data	The information encoded on track 3 of the magnetic stripe as defined in ISO 4909, including field separators, but excluding beginning and ending sentinels and LRC characters.	z..104 (see 4.3.2)	P-36
Transaction description	Data describing additional characteristics of the transaction for billing purposes.	ans...100 (see 4.3.2)	S-104
Transfer, number	The sum number of all transfer transactions processed.	n 10 (see 4.3.12)	S-78
Transfer, reversal number	The sum number of all transfer reversal transactions processed.	n 10 (see 4.3.12)	S-79
Transmission date and time	Date and time the message entered into the data interchange system. To be expressed in Greenwich Mean Time.	n 10 MMDDhhmmss	P-7

4.3.1 Variable length data elements less than 100

For any variable length data element with a maximum length of less than 100 characters, an additional two positions shall prefix said data element and shall contain the length of the data element which follows.

The format is LLVAR. All variable length data element definitions in this International Standard do not include the two positions of length in the representation column.

All length attributes shall be right justified and zero filled. For example, Primary Account Number 123456789012 will be represented by 12123456789012. The first "12" indicates 12 digits to follow.

4.3.2 Variable length data elements less than 1000

For any variable length data element with a maximum length of less than 1000 characters, an additional three positions shall prefix said data element and shall contain the length of the data element which follows.

The format is LLLVAR. All variable length data element definitions in this International Standard do not include the three positions of length in the representation column.

All length attributes shall be right justified and zero filled. For example, if Track 3 was included in a message and Track 3 contained only 70 characters of information, the data element would be represented as 070nnn...nnn. The "070" indicates 70 characters to follow.

4.3.3 Identification of financial institutions

Institutions shall be identified by the procedure specified in ISO 7812, ISO 3166 and annex A of ISO 4909. If the major industry identifier "50" is used, then the associated country code data element shall be used as follows:

- a) acquiring institution identification code and acquiring institution country code;

- b) primary account number extended and primary account number extended country code;
- c) settlement institution identification code and settlement institution country code;
- d) forwarding institution identification code and forwarding institution country code;
- e) receiving institution identification code and receiving institution country code.

4.3.4 File update codes

- | | |
|-----|---|
| 0 | Unassigned, |
| 1 | Add record, |
| 2 | Change record, |
| 3 | Delete record, |
| 4 | Bulk replacement (see note 1), |
| 5 | Inquiry, |
| 6 | Delete record, system purge (see note 2), |
| 7 | Add file, |
| 8 | Delete file, |
| 9 | Unassigned, |
| A-F | Reserved for ISO use (see note 3), |
| G-N | Reserved for national use (see note 3), |
| O-Z | Reserved for private use (see note 3). |

NOTES

1. "Bulk replacement" is equivalent to adding a record without consideration for what might previously have been on file. Previous data on file are automatically erased.

2. "Delete record, system purge" is normally utilized to remove expired or inactive records from a negative file.

3. Alpha characters (A-Z) are not defined in ISO 7580.

4.3.6 Network management information code

The Network management information codes are given in table 5.

4.3.6 Original data elements

These five data elements are in fixed length format totalling 42 numerics. Absence of data is indicated by zeros.

- a) Original message type identifier n4;
- b) Original system trace audit number n6;

- c) Original transmission date and time n10;
- d) Original acquiring institution identification code n11;
- e) Original forwarding institution identification code n11.

4.3.7 Point of service condition code

The Point of service condition codes and their meanings are given in table 6.

If several special conditions exist, precedence should be given to fraud or security descriptive codes, and within fraud and non-fraud conditions, precedence should be given to the more specific rather than general description.

Table 5 – Network management information codes and their positions

Position 1		Positions 2-3	
0	System condition	00	Reserved
		01	Sign on
		02	Sign off
		03	Target system unavailable
		04	Message originator's system in back-up mode
		05	Special instructions
		06	Initiate alternate routing
		07-39	Reserved for ISO use
		40-59	Reserved for national use
		60-99	Reserved for private use
1	System security	00	Reserved
		01	Key change
		02	Security alert
		03	Password change
		04	Device authentication
		05-39	Reserved for ISO use
2	System accounting	40-59	Reserved for national use
		60-99	Reserved for private use
		00	Reserved
		01	Initiate cutoff
		02	Cutoff complete
3	System audit control	03-39	Reserved for ISO use
		40-59	Reserved for national use
		60-99	Reserved for private use
		00	Reserved
		01	Echo test
4-5	Reserved	02-39	Reserved for ISO use
		40-59	Reserved for national use
		60-99	Reserved for private use
		00-99	Reserved for ISO use
6-7	Reserved	00-99	Reserved for national use
		00-99	Reserved for private use

Table 6 – Point of service condition codes

Code	Meaning	Code	Meaning
00	Normal presentation	15	Customer terminal (home terminal)
01	Customer not present	16	Administration terminal
02	Unattended terminal able to retain card	17	Returned item (chargeback)
03	Merchant suspicious	18	No cheque in envelope/all returned
04	Electronic cash register interface	19	Deposit out-of-balance/all returned
05	Customer present, card not present	20	Payment out-of-balance/all returned
06	Pre-authorized request	21	Manual reversal
07	Telephone device request	22	Terminal error/not counted
08	Mail and/or telephone order	23	Terminal error/not counted
09	Security alert	24	Deposit out-of-balance/applied contents
10	Customer identify verified	25	Payment out-of-balance/applied contents
11	Suspected fraud	26	Withdrawal bad error/reversed
12	Security reasons	27	Unattended terminal unable to retain card
13	Representation of item	28-40	Reserved for ISO use
14	Public utility terminal	41-50	Reserved for national use
		51-99	Reserved for private use

4.3.8 Processing code

Positions 1 and 2 are two digits that describe a specific transaction.

00-19	Debits
00	Goods and service
01	Withdrawal/cash advance
02	Adjustment
03	Cheque guarantee (funds guaranteed)
04	Cheque verification (funds available but not guaranteed)
05	Eurocheque
06	Traveller cheque
07	Letter of credit
08	Giro (postal banking)
09	Goods and services with cash disbursement
10-13	Reserved for ISO use
14-16	Reserved for national use
17-19	Reserved for private use
20-29	Credits
20	Returns
21	Deposits
22	Adjustment
23	Cheque deposit guarantee
24	Cheque deposit
25-26	Reserved for ISO use
27	Reserved for national use
28-29	Reserved for private use
30-39	Inquiry services
30	Available funds inquiry
31	Balance inquiry
32-35	Reserved for ISO use
36-37	Reserved for national use
38-39	Reserved for private use
40-49	Transfer services
40	Cardholder accounts transfer
41-45	Reserved for ISO use

46-47 Reserved for national use
48-49 Reserved for private use

50-59 Reserved
50-79 Reserved for ISO use
80-89 Reserved for national use
90-99 Reserved for private use

Positions 3 and 4 are a two digit code describing the account type affected for debits and inquiries, and the "from" account for transfers.

Positions 5 and 6 are a two-digit code describing the account type affected for credits and the "to" account for transfers.

Positions 3 and 5 are allocated as follows:

0	Default
1	Savings account
2	Cheque account
3	Credit facility
4	Universal account number
5	Investment account
6-7	Reserved for ISO use
8	Reserved for national use
9	Reserved for private use

Positions 4 and 6 are allocated as follows:

0	Default
1-2	Reserved for ISO use
3-7	Reserved for national use
8-9	Reserved for private use

4.3.9 Response code

The response codes are shown in table 7.

Table 7 — Response codes

Code	Response description	Action
00	Approved or completed successfully	Approve
01	Refer to card issuer	Decline
02	Refer to card issuer's special conditions	—
03	Invalid merchant	—
04	Pick-up	Pick-up
05	Do not honour	Decline
06	Error	—
07	Pick-up card, special condition	Pick-up
08	Honour with identification	Approve
09	Request in progress	—
10	Approved for partial amount	Approve
11	Approved (VIP)	Approve
12	Invalid transaction	Approve
13	Invalid amount	—
14	Invalid card number (no such number)	Decline
15	No such issuer	Decline
16	Approved, update track 3	Approve

Table 7 — Response codes (concluded)

Code	Response description	Action
17	Customer cancellation	—
18	Customer dispute	—
19	Re-enter transaction	Decline
20	Invalid response	—
21	No action taken	—
22	Suspected malfunction	—
23	Unacceptable transaction fee	Decline
24	File update not supported by receiver	—
25	Unable to locate record on file	—
26	Duplicate file update record, old record replaced	—
27	File update field edit error	—
28	File update file locked out	—
29	File update not successful, contact acquirer	—
30	Format error	—
31	Bank not supported by switch	Decline
32	Completed partially	—
33	Expired card	Pick-up
34	Suspected fraud	Pick-up
35	Card acceptor contact acquirer	Pick-up
36	Restricted card	Pick-up
37	Card acceptor call acquirer security	Pick-up
38	Allowable PIN tries exceeded	Pick-up
39	No credit account	Decline
40	Requested function not supported	Decline
41	Lost card	Pick-up
42	No universal account	Decline
43	Stolen card, pick-up	Pick-up
44	No investment account	Decline
45-50	Reserved for ISO use	—
51	Not sufficient funds	Decline
52	No chequing account	Decline
53	No savings account	Decline
54	Expired card	Decline
55	Incorrect personal identification number	Decline
56	No card record	—
57	Transaction not permitted to cardholder	Decline
58	Transaction not permitted to terminal	Decline
59	Suspected fraud	Decline
60	Card acceptor contact acquirer	Decline
61	Exceeds withdrawal amount limit	Decline
62	Restricted card	Decline
63	Security violation	—
64	Original amount incorrect	Decline
65	Exceeds withdrawal frequency limit	Decline
66	Card acceptor call acquirer's security department	Decline
67	Hard capture requires that card be picked up at ATM	Pick-up
68	Response received too late	—
69-74	Reserved for ISO use	—
75	Allowable number of PIN tries exceeded	Decline
76-89	Reserved for private use	—
90	Cutoff is in process (switch ending a day's business and starting the next). Transaction can be sent again in a few minutes	—
91	Issuer or switch is inoperative	Decline
92	Financial institution or intermediate network facility cannot be found for routing	Decline
93	Transaction cannot be completed. Violation of law	Decline
94	Duplicate transmission	—
95	Reconcile error	—
96	System malfunction	—
97-99	Reserved for national use	—
Zero-A-9Z	Reserved for ISO use	—
A-Zero-MZ	Reserved for national use	—
N-Zero-ZZ	Reserved for private use	—

4.3.10 Settlement code

A code indicating the result of a reconciliation request, the codes are shown in table 8.

Table 8 – Settlement codes

Code	Response description
0	Reserved for ISO use
1	In balance
2	Out of balance
3	Error
4-5	Reserved for ISO use
6-7	Reserved for national use
8-9	Reserved for private use

4.3.11 Expression of amounts

The amount expressed in the currency of the associated currency code data element. Where a minor unit of currency applies, amounts shall be expressed in the minor unit of currency, without a decimal separator, for example an amount value of 100 in US currency signifies one US dollar, but 100 in Italian currency signifies 100 lire.

4.3.12 Settlement data elements

All settlement data elements contain only values representing transactions since the last settlement cutoff.

4.3.13 Replacement amounts

These four data elements are in fixed length format totalling 42 characters. Absence of data is indicated by zeros. These data elements are used when attempting to partially reverse or may be used for the complete reversal of a previous transaction and contain the new amounts. The original message amounts will be in the appropriate data elements.

- a) Actual amount, transaction n12;
- b) Actual amount, settlement n12;
- c) Actual amount, transaction fee $x + n8$;
- d) Actual amount, settlement fee $x + n8$.

4.3.14 Point of service entry mode

Positions 1 and 2 PAN entry mode

00	Unspecified
01	Manual
02	Magnetic stripe
03	Bar code
04	OCR
05	Integrated circuit card
06-60	Reserved for ISO use
61-80	Reserved for national use
81-99	Reserved for private use

Position 3	PIN entry capability
0	Unspecified
1	PIN entry capability
2	No PIN entry capability
3-5	Reserved for ISO use
6-7	Reserved for national use
8-9	Reserved for private use

4.3.15 Reconciliation

All amounts in the Reconciliation control messages are in the currency of settlement. The "x" portion of any fee data element, defined as $x + n8$, shall contain a "D" if the fee is due to the acquirer or a "C" if the fee is due from the acquirer.

For purposes of the statements below it is assumed that the transaction currency is the same currency as that of settlement. In normal practice, however, a test as to the presence of amount, settlement; amount, settlement fee; and amount, settlement processing fee shall be necessary to determine which data elements are to be added to the Reconciliation control message (settlement) data elements.

The following assumes that the message requests have been completed and requires updating of settlement totals, according to the specifics of your interchange environment or business arrangement.

For all authorization, financial transactions and reversal messages

- a) If the amount, transaction fee, x, is "C", add the amount, transaction fee to credits, transaction fee amount.
- b) If the amount, transaction fee, x, is "D", add the amount, transaction fee to the debits, transaction fee amount.
- c) If the amount, transaction processing fee, x, is "C", add the amount, transaction processing fee to the credits, processing fee amount.
- d) If the amount, transaction processing fee, x, is "D", add the amount, transaction processing fee to the debits, processing fee amount.

For all authorization (01XX) messages regardless of the processing code

- e) Add 1 to the authorizations, number.

For all financial transaction (02XX) messages with

- f) Processing codes of 00 to 19 (debit)

Add 1 to the debits, number and add the amount, transaction to the debits, amount.

- g) Processing codes of 20 to 29 (credit)
 - Add 1 to the credits, number and add the amount, transaction to the credits, amount.
- h) Processing codes 30 to 39 (inquiry)
 - Add 1 to the inquiries, number.
- i) Processing codes 40 to 49 (transfer)
 - Add 1 to transfers, number.

For all reversal (04XX) messages

- j) where the Original message type identifier within the original data elements is a financial transaction (02XX) with
 - 1) Processing codes 00 to 19 (debit)
 - add 1 to the credits, reversal number and add the amount, transaction to the credits, reversal amount.
 - 2) Processing codes 20 to 29 (credit)
 - add 1 to debits, reversal number and add the amount, transaction to the debits, reversal amount.
 - 3) Processing codes 40 to 49 (transfer)
 - Add 1 to the transfer reversal number.
- k) where the replacement amounts data element (partial reversal)
 - 1) If the actual amount, transaction fee, x, is "C", add the actual amount, transaction fee to the credits, transaction fee amount.
 - 2) If the actual amount, transaction fee, x, is "D", add the actual amount, transaction fee to the debits, transaction fee amount.
 - 3) If the processing code is 00 to 19 (debit),
 - add the actual amount, transaction to the debits, amount.
 - 4) If the processing code is 20 to 29 (credit),
 - add the actual amount, transaction to the credits, amount.

For calculation of amount, net settlement:

$$\begin{aligned} \text{amount, net settlement} = & (\text{credits, transactions fee amount} \\ & + \text{credits, processing fee amount} + \text{credits, amount} + \\ & \text{credits, reversal amount}) - (\text{debits, transactions fee} \\ & \text{amount} + \text{debits, processing fee amount} + \text{debits, amount} \\ & + \text{debits, reversal amount}) \end{aligned}$$

If the amount, net settlement after completing the computation above results in a negative value the character "D" shall be inserted into the "x" portion of amount, net settlement otherwise the character "C" shall be inserted in the "x" field.

Amount, net settlement takes into consideration only an acquirer's transactions entered into the interchange system, or only those transactions entered into the interchange system for a card issuer. The transactions processed for a financial institution which play the role of both an acquirer and a card issuer shall have each relationship reconciled separately.

4.3.16 Point of service PIN capture code

The Point of service PIN capture codes are given in table 9.

Table 9 — Point of service PIN capture codes

Code	Description
0-3	Reserved for ISO use
4-12	The code indicates the maximum number of PIN characters accepted by the point of service device
13-59	Reserved for ISO use
60-79	Reserved for national use
80-99	Reserved for private use

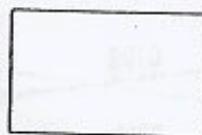
4.3.17 Additional amounts

The following definitions can occur as many as six times.

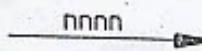
- a) Account type n2 as defined in positions 3 and 4 or positions 5 and 6 of the processing code data element.
- b) amount type n2
 - 00-19 Account related balances
 - 00 Reserved for ISO use
 - 01 Account ledger balance
 - 02 Account available balance
 - 03 Amount owing
 - 04 Amount due
 - 05-10 Reserved for ISO use
 - 11-15 Reserved for national use
 - 16-19 Reserved for private use
 - 20-39 Card related amounts
 - 20 Amount remaining this cycle
 - 21-30 Reserved for ISO use
 - 31-35 Reserved for national use
 - 36-39 Reserved for private use
 - 40-59 Transaction related amounts
 - 40 Amount cash
 - 41 Amount goods and services
 - 42-50 Reserved for ISO use
 - 51-55 Reserved for national use
 - 56-59 Reserved for private use
 - 60-99 Reserved
 - 60-79 Reserved for ISO use
 - 80-89 Reserved for national use
 - 90-99 Reserved for private use
- c) Currency code n3 or a3
- d) Amount x + n12

5 Message flow

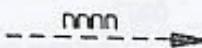
Message flow keys



Party



Obligatory message with
message type



Optional message with
message type



Message may be repeated

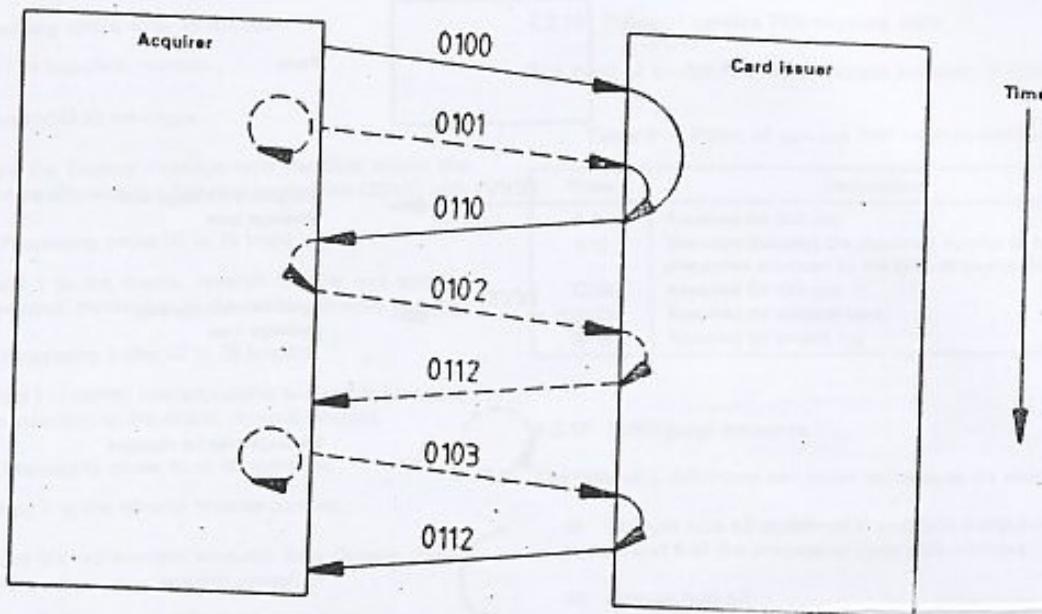


Obligatory response



Optional response

5.1 Authorization request

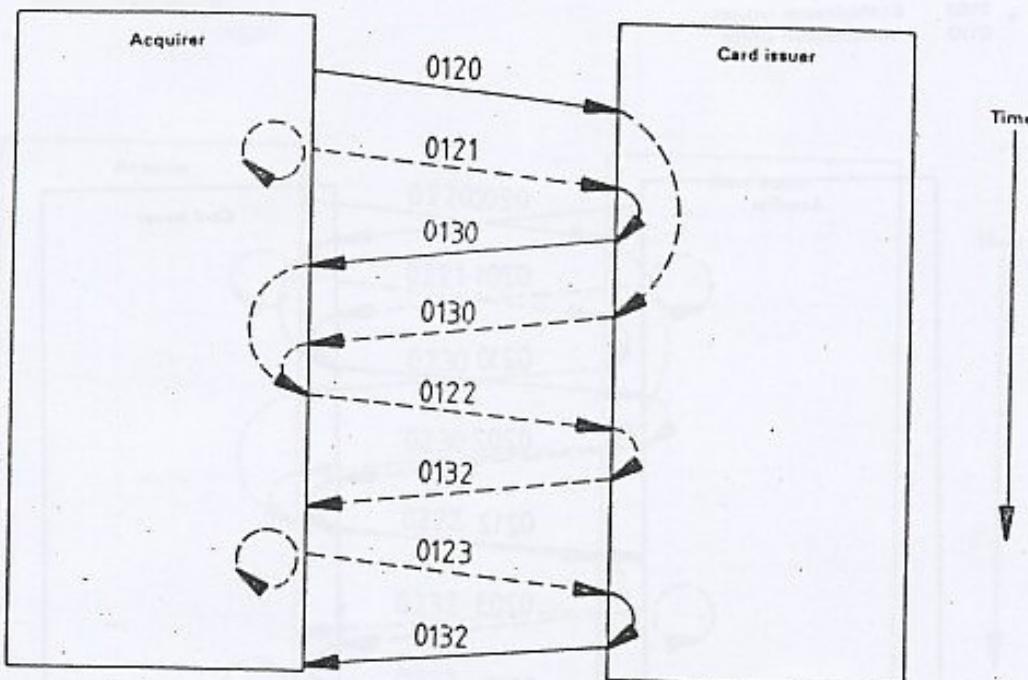


- 0100/0101 Authorization request/repeat
- 0110 Authorization request response
- 0102/0103 Authorization completion confirmation/repeat
- 0112 Authorization completion response

This sequence may be followed by one of these message sequences

- 0200 Financial transaction request
- 0220 Financial transaction advice
- 0400 Acquirer reversal request
- 0402 Card issuer reversal request
- 0420 Acquirer reversal advice
- 0422 Card issuer reversal advice

5.2 Authorization advice



- 0120/0121 Authorization advice/repeat
- 0130 Authorization advice response
- 0122/0123 Authorization advice completion confirmation/repeat
- 0132 Authorization advice completion response

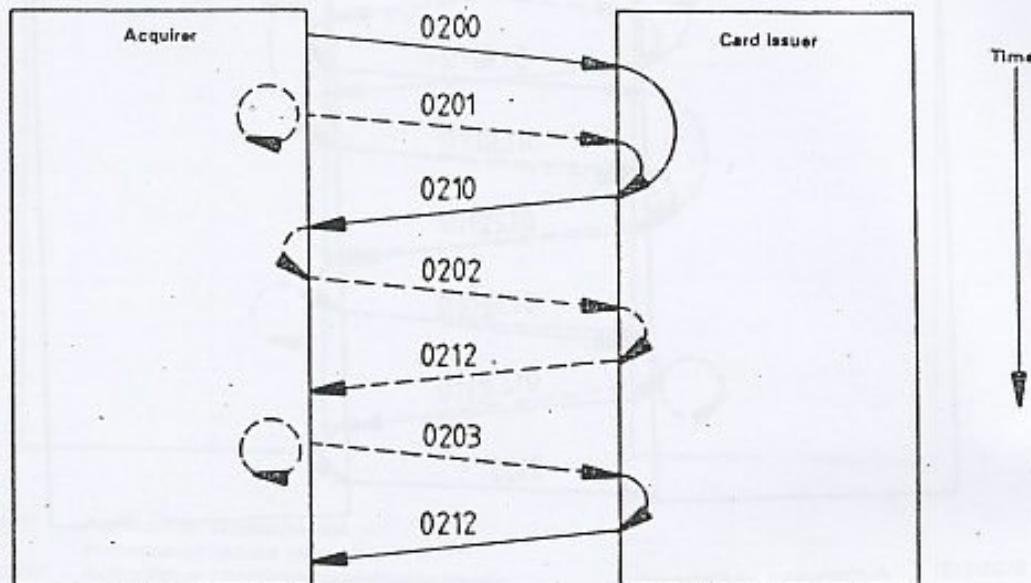
This sequence may be followed by one of these message sequences

- 0200 Financial transaction request
- 0220 Financial transaction advice
- 0400 Acquirer reversal request
- 0402 Card issuer reversal request
- 0420 Acquirer reversal advice
- 0422 Card issuer reversal advice

6.3 Financial transaction request

This message sequence may be preceded by one of these sequences

- 0100 Authorization request
- 0120 Authorization advice



- 0200/0201 Financial transaction request/repeat
- 0210 Financial transaction request response
- 0202/0203 Financial transaction completion confirmation/repeat
- 0212 Financial transaction completion response

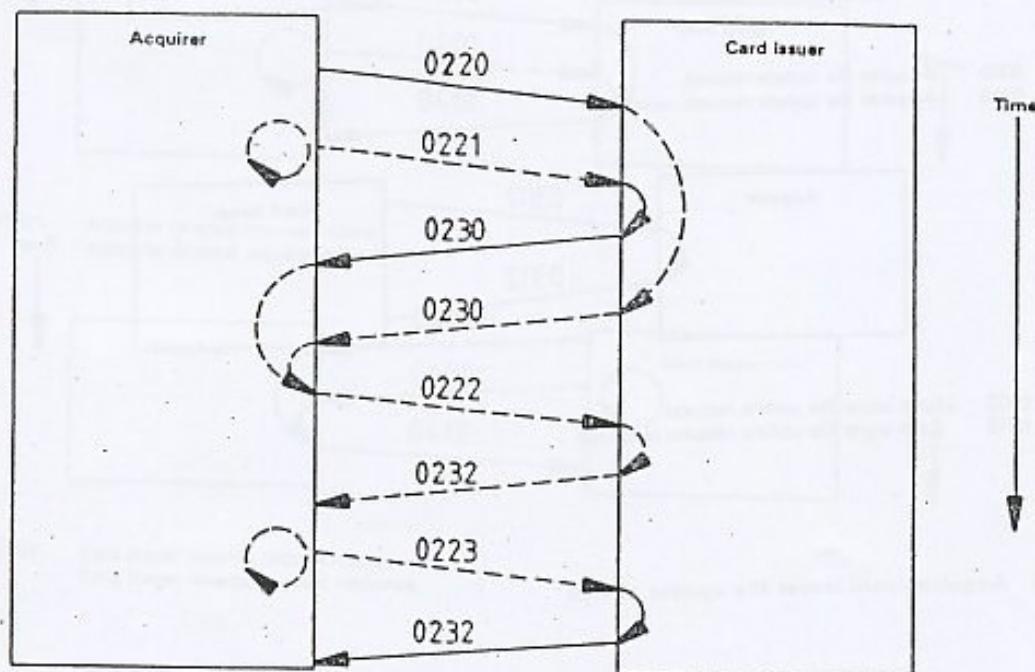
This sequence may be followed by one of these message sequences

- 0400 Acquirer reversal request
- 0402 Card issuer reversal request
- 0420 Acquirer reversal advice
- 0422 Card issuer reversal advice

5.4 Financial transaction advice

This message sequence may be preceded by one of these sequences

- 0100 Authorization request
- 0120 Authorization advice

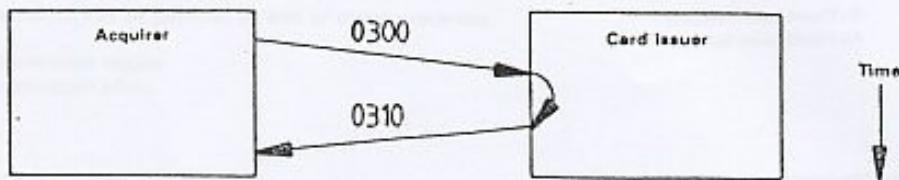


- 0220/0221 Financial transaction advice/repeat
- 0230 Financial transaction advice response
- 0222/0223 Financial transaction advice completion confirmation/repeat
- 0232 Financial transaction advice completion response

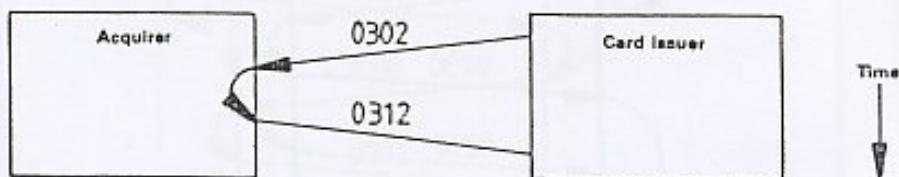
This sequence may be followed by one of these message sequences

- 0400 Acquirer reversal request
- 0402 Card issuer reversal request
- 0420 Acquirer reversal advice
- 0422 Card issuer reversal advice

5.6 Acquirer/card issuer file update request

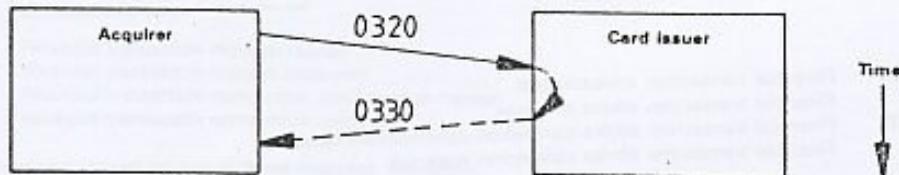


0300 Acquirer file update request
0310 Acquirer file update request response

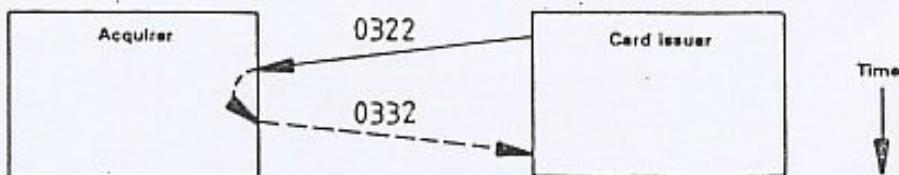


0302 Card issuer file update request
0312 Card issuer file update request response

5.6 Acquirer/card issuer file update advice



0320 Acquirer file update advice
0330 Acquirer file update advice response

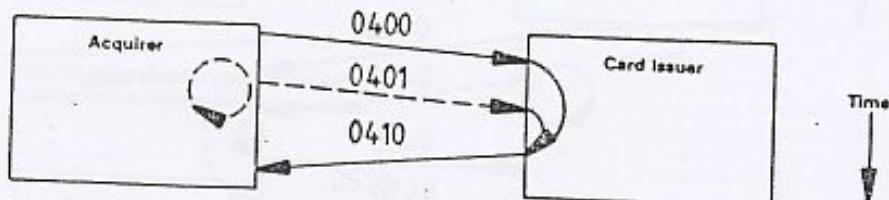


0322 Card issuer file update advice
0332 Card issuer file update advice response

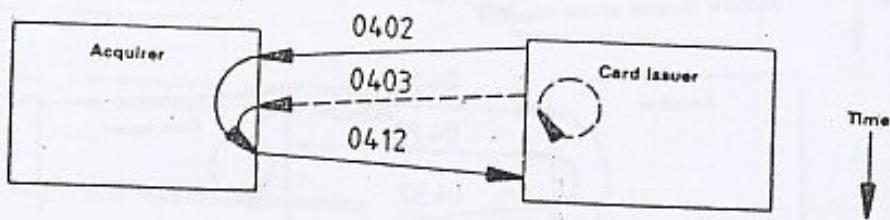
5.7 Acquirer/card issuer reversal request

These message sequences will have been preceded by one of these sequences

- 0100 Authorization request
- 0120 Authorization advice
- 0200 Financial transaction request
- 0220 Financial transaction advice



- 0400/0401 Acquirer reversal request/repeat
- 0410 Acquirer reversal request response

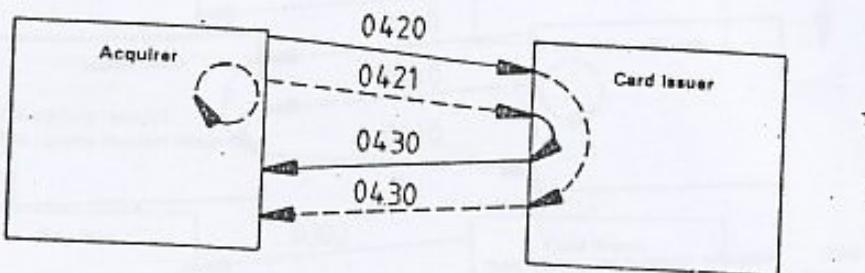


- 0402/0403 Card issuer reversal request/repeat
- 0412 Card issuer reversal request response

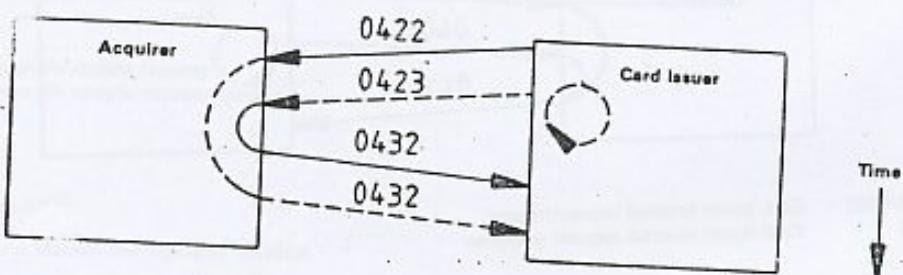
E.8 Acquirer/card issuer reversal advice

The message sequences will have been preceded by one of these sequences

- 0100 Authorization request
- 0120 Authorization advice
- 0130 Financial transaction request
- 0140 Financial transaction advice

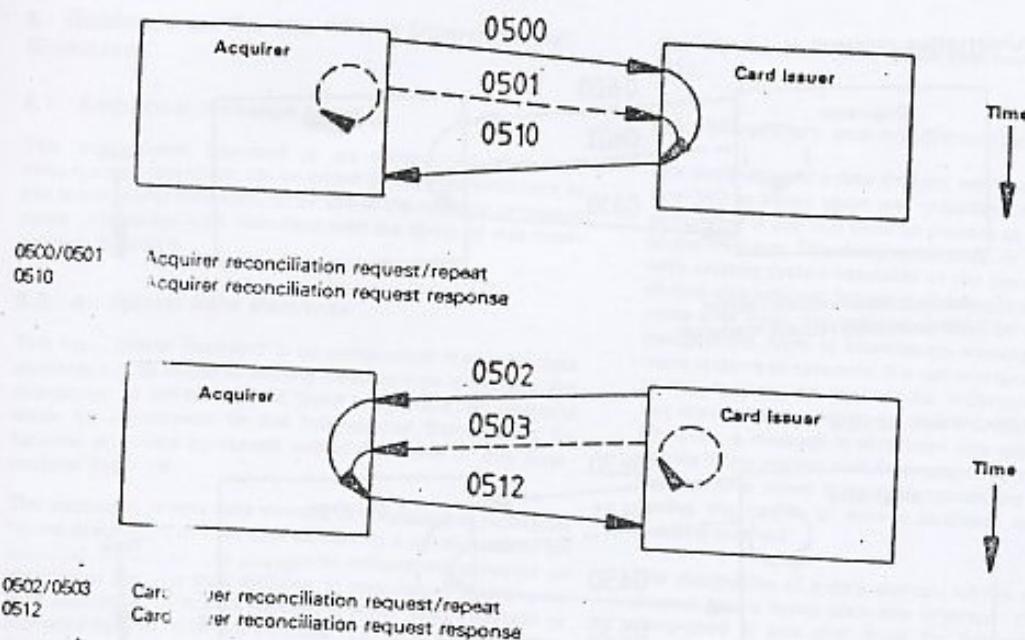


0420/0421 Acquirer reversal advice/repeat
0430 Acquirer reversal advice response

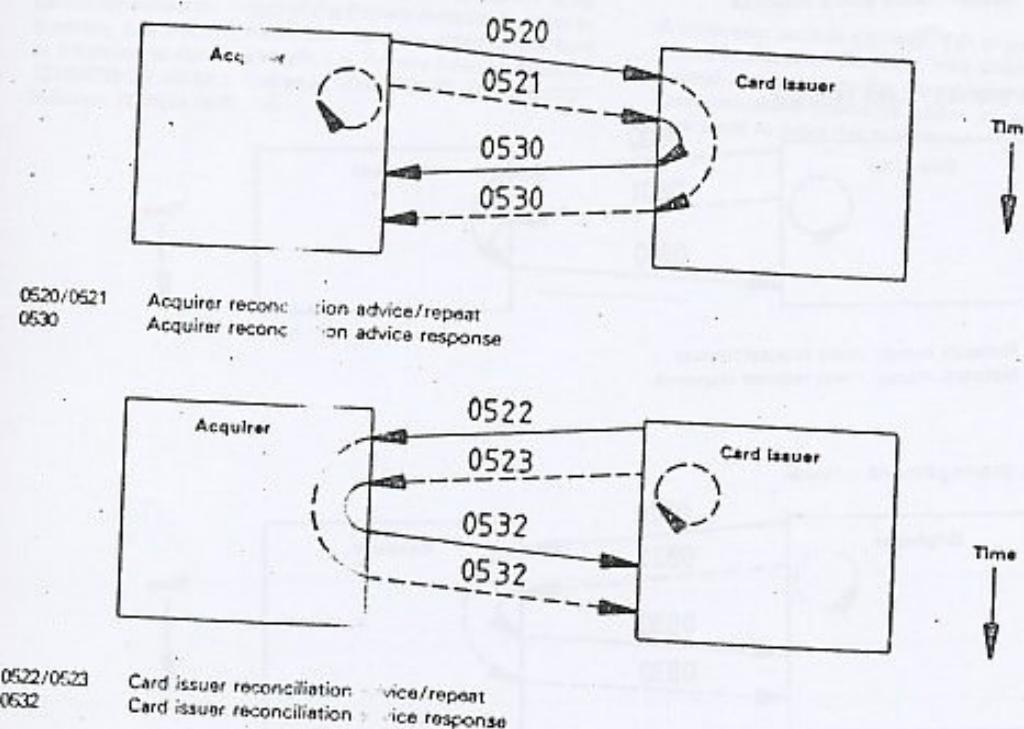


0422/0423 Card issuer reversal advice/repeat
0432 Card issuer reversal advice response

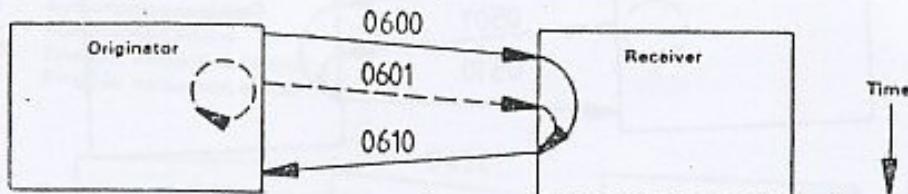
6.9 Acquirer/card issuer reconciliation request



5.10 Acquirer/card issuer reconciliation advice

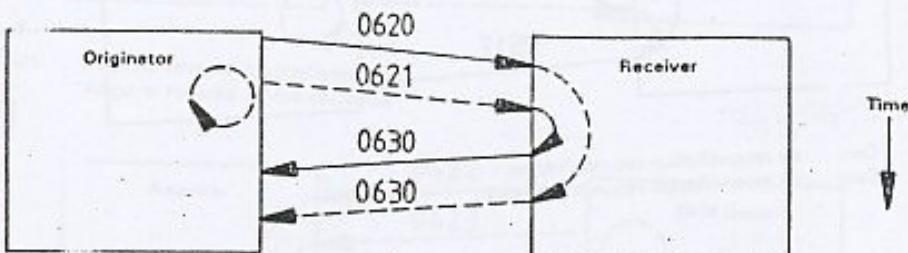


5.11 Administrative request



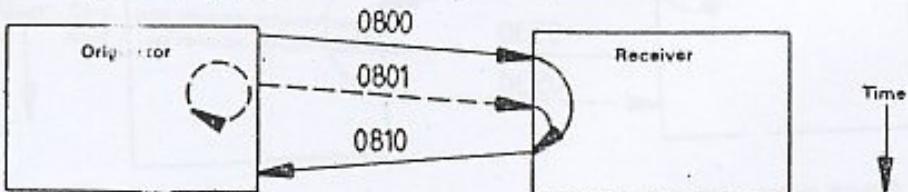
0600/0601 Administrative request/repeat
 0610 Administrative request response

5.12 Administrative advice



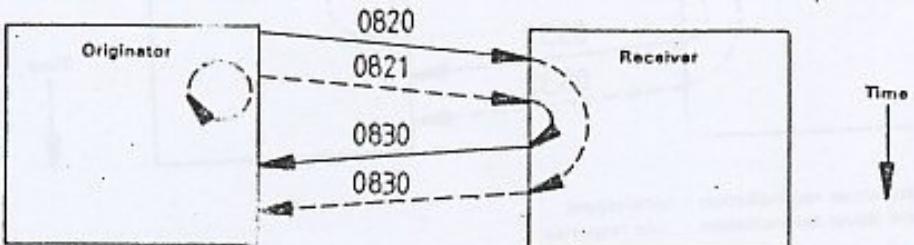
0620/0621 Administrative advice/repeat
 0630 Administrative advice response

5.13 Network management request



0800/0801 Network management request/repeat
 0810 Network management request response

5.14 Network management advice



0820/0821 Network management advice/repeat
 0830 Network management advice response

6 Guidance on the use of this International Standard

6.1 Additional message types

This International Standard is so constructed that new message type identifiers can be added by either amendment to this International Standard, or by use of the national or private series of message type identifiers with the terms of this International Standard.

6.2 Additional data elements

This International Standard is so constructed that new data elements can be added to existing message type identifiers. An unassigned bit will be required. Such assignment can be made either by amendment to this International Standard or by national or private agreement within the terms of this International Standard.

The addition of a new data element to a message is facilitated by the assignment of that data element to a position in the bit map technique. A one-bit position is used to indicate the presence or absence of the new data element. In conjunction with the bit map technique, each data element is either fixed in length or preceded by a fixed length attribute "LL" or "LLL" indicating the length of the variable data to follow. The length attribute and data consume only one bit position in the bit map.

For example, the Primary Account Number can be variable in length with a maximum length of 19. In order to identify to all parties concerned the length of the Primary Account Number in question, a two-position attribute has been added to the field as a location to store the length, i.e. Primary Account Number 123456789123 will be stored as 12123456789123. The first "12" indicates 12 digits to follow.

All national and private use fields shall have a length attribute of "LLL".

6.3 Mandatory and conditional data elements

The designation of a data element within a message as mandatory (M) is based upon one criterion: the data element so designated is one that must be present to support the purpose of the message. This designation may, in some cases, conflict with existing system capability or the needs of potential users of this International Standard. To avoid unnecessary controversy over these designations, it shall be understood that the designations apply to interchange messages between two or more systems or networks. If a self-contained network chooses to modify these designations for intrasystem use, this would not constitute a violation of this International Standard. If, however, a message is sent from one system to another, all parties in the system shall be prepared to meet the mandatory requirements unless these designations are bilaterally modified during the course of normal business negotiations by the systems involved.

The designation of a data element within a message as Conditional (NN) is based upon one criterion: the data element so designated is one that must be present if the condition specified in table 3 is satisfied.

6.4 Unintentional introduction of control characters

A bit stream, such as a bit map, PIN or password data elements in this International Standard, may unintentionally introduce a control character into the transmission stream under certain communications protocols. Users of such protocols should take steps to avoid this occurrence.

UDC 336.717.101.3 : 681.3.04 : 681.178.5

Descriptors : banking, banking documents, information interchange, inter-bank payment messages, structures.

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