

INTERNATIONAL STANDARD

ISO
8583

Second edition
1993-12-15

Financial transaction card originated messages — Interchange message specifications

*Messages initiés par carte de transaction financière — Spécifications
d'échange de messages*



Reference number
ISO 8583:1993(E)

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International Organization for Standardization
Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 8583 was prepared by Technical Committee ISO/TC 68, *Banking and related financial services*, subcommittee SC 6, Financial transaction cards, related media and operations.

This second edition cancels and replaces the first edition (ISO 8583:1987), of which it constitutes a technical revision.

Annex A forms an integral part of this International Standard. Annexes B and C are for information only.

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Introduction

Services of the financial industry include the exchange of electronic messages relating to financial transactions. Agreements on application 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 application specifications. The application specification may remain at the private level. Designers of such applications have complete design freedom within the overall constraint that messages shall be convertible to this interface format in order that international interchange may take place.

This International Standard introduces the concept of a message version number to distinguish between messages which comply with this or subsequent editions of the Standard, and those complying with the 1987 edition.

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.

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

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Financial transaction card originated messages — Interchange message specifications

1 Scope

This International Standard addresses the following:

a) Interchange Message Specifications

This International Standard specifies a common interface by which financial transaction card originated messages may be interchanged between acquirers and card issuers. It specifies message structure, format and content, data elements and values for data elements. The method by which settlement takes place is not within the scope of this standard.

b) Registration Authority

This International Standard specifies a numbering system for institution identification codes for financial institutions which do not have an ISO 7812 institution identification number. It also specifies the procedures used for the registration of institution identification codes.

c) Maintenance Agency of Codes

This International Standard establishes procedures for a Maintenance Agency for codes used in this standard, the method of applying for codes and the method of obtaining lists of codes.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 3166:1988, *Codes for the representation of names of countries*.

ISO 4217:1990, *Codes for the representation of currencies and funds*.

ISO 4909:1987, *Bank cards — Magnetic stripe data content for track 3*.

ISO 7372:1986, *Trade data interchange — Trade data elements directory (Endorsement of UNECE/TDED, sections 1,2,3,4 and 9)*.

ISO 7810:1985, *Identification cards — Physical characteristics*.

ISO 7812:1987, *Identification cards — Numbering system and registration procedure for issuer identification*.

ISO 7813:1990, *Identification cards — Financial transaction cards*.

ISO 8601:1988, *Data elements and interchange formats — Information interchange — Representation of dates and times*.

ISO 9564-1:1991, *Banking — Personal Identification Number management and security — Part 1: PIN protection principles and techniques*.

ISO 9807:1991, *Banking and related financial services — Requirements for message authentication (retail)*.

ISO 10202-1:1991, *Financial transaction cards — Security architectures of financial transaction systems using integrated circuit cards — Part 1: Card life cycle*.

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. The acquirer remains unchanged throughout the transaction.

3.2 advice: A message where the sender notifies the receiver of an activity that has been taken, requiring no approval but requiring a response.

3.3 authorization: The approval or guarantee of funds given by the card issuer to the acquirer (see 4.1.3.1).

3.4 authorizing agent: An institution that acts on behalf of and with the authority of the card issuer.

3.5 bit map: A series of 64 bits used to identify the presence (denoted by 1) or absence (denoted by 0) of each data element in a message (see 4.2).

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

3.7 cardholder: Customer associated with the primary account number requesting the transaction from the card acceptor.

3.8 (card) issuer: Financial institution (or its agent) which issues the financial transaction card to the cardholder. The card issuer remains unchanged throughout a transaction.

3.9 chargeback: A transaction from the card issuer to the acquirer used to partially or completely reverse a previously completed financial transaction (see 4.1.3.5).

3.10 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.

3.11 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.

3.12 financial transaction: A transaction from the acquirer to the card issuer containing all the necessary data elements for authorization, posting and reconciliation (see 4.1.3.2).

3.13 file action: A transaction used to add, change, delete or replace a file or a record (see 4.1.3.3).

3.14 forwarding institution: Institution within a transaction flow that sends a message forward from the originating institution (see 4.4.4).

3.15 inquiry: An authorization transaction that requests information.

3.16 institution identification code: Unique number assigned to an institution participating in financial card originated message interchange (see 4.4.4 and 4.4.16).

3.17 maintenance agency: Entity under the authority of the ISO Council responsible for maintaining the list of codes within this International Standard.

3.18 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.

3.19 message class: The set of messages which describes the specific activities being performed.

3.20 message function: The identification of the purpose of a message and the activity involved.

3.21 notification: A message where the sender notifies the receiver of an activity taken, requiring no approval or response.

3.22 payment: A movement of funds from a cardholder account to another party, e.g., a utility bill payment.

3.23 point of service: Card acceptor location where the cardholder agrees the transaction takes place.

3.24 receiving institution: Institution within a transaction flow that receives a message before it reaches the final destination (see 4.4.4).

3.25 reconciliation: An exchange of messages between two institutions (acquirer, card issuer or their agents) to reach agreement on financial totals (see 4.1.3.6).

3.26 registration authority: Entity under the authority of the ISO Council designated to allocate institution identification codes and maintain the register of those codes.

3.27 replacement authorization: An authorization used when a previous authorization was approved and a subsequent authorization is required because the amount, transaction is now different from the originally approved amount (see 4.1.3.1).

3.28 representment: A financial transaction originated by an acquirer to partially or wholly recover funds charged back to the acquirer by a card issuer in a chargeback (see 4.1.3.2).

3.29 request: A message where the sender informs the receiver that a transaction is in progress and a response is required to complete the activity.

3.30 resubmission: The reentry of a request message which was previously denied or rejected (see 4.1.3.1 and 4.1.3.2).

3.31 reversal: A transaction from the acquirer to the card issuer informing the card issuer that the previously initiated transaction cannot be processed as instructed, i.e., is undeliverable, unprocessed or cancelled by the receiver (see 4.1.3.4).

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

3.33 settlement institution: Financial institution (or its agent) at which the accounts are held by the parties settling. This institution, acting on information provided by the parties, transfers the appropriate funds between the accounts.

3.34 supplementary authorization: An authorization used when a previous authorization was approved and one or more subsequent authorizations are required for additional amounts (see 4.1.3.1).

3.35 transaction: One or more related messages within the same message class designed to complete (insofar as this is possible) the intention of the sender of the original message.

3.36 transaction destination institution: The final institution receiving the request, advice or notification message in a transaction. The transaction destination remains unchanged throughout the transaction.

3.37 transaction originator institution: The institution initiating the request, advice or notification message in a transaction. The transaction originator remains unchanged throughout the transaction.

3.38 transfer: The movement of funds by a cardholder from one of its accounts to another of the cardholder's accounts both of which are held by the same financial institution.

3.39 version: A description of interchange message formats that distinguishes between different arrangements of data elements within bit maps (i.e., where the data elements are added, deleted or their meaning, position or format changes or the message flows are modified) resulting from revisions of this standard (see 4.1.1).

4 Message structure

4.1 General

Each message identified in this International Standard shall be constructed in the following sequence: message type identifier, (see 4.1.1), one or two bit maps (see 4.2) and a series of data elements in the order of the bit map representation (see 4.3). Clause 5 shows the circumstances when a message shall (or may) be sent, and the relationship between messages.

4.1.1 Message type identifier structure

The message type identifier is a four-digit numeric field identifying each message version number, message class, message function and transaction originator. Every message shall begin with a message type identifier. Version numbers shall not be assigned as the result of editorial or code list changes.

First Position — Version Number

- 0 — ISO 8583:1987
- 1 — ISO 8583:1993
- 2-7 — reserved for ISO use
- 8 — reserved for national use
- 9 — reserved for private use

Where the first position is 1, the second through fourth positions shall be defined as follows:

Second Position — Message Class

- 0 — reserved for ISO use
- 1 — authorization
- 2 — financial
- 3 — file action
- 4 — reversal/chargeback
- 5 — reconciliation
- 6 — administrative
- 7 — fee collection
- 8 — network management
- 9 — reserved for ISO use

Third Position — Message Function

- 0 — request
- 1 — request response
- 2 — advice
- 3 — advice response
- 4 — notification
- 5-9 — reserved for ISO use

Fourth Position — Transaction Originator

- 0 — acquirer
- 1 — acquirer repeat
- 2 — card issuer
- 3 — card issuer repeat
- 4 — other
- 5 — other repeat
- 6-9 — reserved for ISO use

4.1.2 Message Repeats

In 4.1.3, whenever a repeat message is identified, that repeat message shall be identical to its original message with the exception of the message type identifier and, if necessary, date and time, transmission and the message authentication code data elements.

4.1.3 Message Type Identifier Descriptions

Table 6 identifies the message types supported for each message class. Each of the following message classes support a particular activity:

4.1.3.1 Authorization message class

An authorization is an approval or guarantee of funds given by the card issuer to the acquirer. Authorization messages are not intended to permit the application of the approved transaction amount to the cardholder's account for billing or posting.

The following applies to all authorizations:

- a) Authorization request messages shall be used when the transaction cannot complete at the point of service until the response message 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 shall be sent in response to an authorization request message. It indicates the approval or guarantee of funds or the action to be taken as specified in the action code data element.
- c) Authorization advice messages shall be used to inform the card issuer of an authorization transaction which has completed at the point of service.
- d) An authorization advice response message shall be sent in response to an authorization advice message. An authorization advice response message indicates if the card issuer accepts or rejects the transfer of financial liability.

e) Authorization notification messages shall be used to inform the card issuer of an authorization transaction which has completed at the point of service. There is no response message to an authorization notification message.

f) The function code data element shall be used to indicate the type of authorization required (see table 1) and whether the amount, transaction is accurate or estimated. If the final amount, transaction is available the amount, transaction shall be an accurate amount. If the final amount, transaction cannot be determined until later, the amount, transaction shall be an estimated amount.

g) The following types of authorizations are defined:

- i) Original authorization — the first or only authorization used.
- ii) Replacement authorization — an authorization used when a previous authorization was approved and a subsequent authorization is required to replace the previously authorized amount because the amount of the transaction is now greater or less.
- iii) Resubmission authorization — an authorization used to reenter a previous authorization that was denied or rejected.
- iv) Supplementary authorization — an authorization used when one or more previous authorizations were approved and a further authorization is required for an additional amount (see table 1).

Table 1 — 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 authorized amount
resubmission	104,105	transaction amount	--
supplementary	106,107	additional amount	sum of previous approvals, if available

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

h) The following types of authorization decisions are defined:

- i) Full approval — an authorization where the response from the card issuer indicates approval of the requested amount.
- ii) Partial approval — an authorization where the response from the card issuer indicates approval of an amount less than the originally requested amount (see table 1).
- iii) Declined or rejected — an authorization where the request for approval is declined or the authorization request or advice message is rejected (see table 1).

Table 1 identifies the usage of amount, transaction and original amount, transaction within these authorization message types.

4.1.3.2 Financial message class

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

The following applies to all financial transactions:

a) Financial request messages shall be used when the transaction cannot complete at the point of service until the response message is received indicating the action to be taken. The use of a financial request message does not imply that the cardholder is present, (e.g. telephone or mail order).

b) A financial request response message shall be sent in response to a financial request message. A financial request response message indicates the

approval or guarantee of funds or the action to be taken as specified in the action code data element.

c) Financial advice messages shall be used to inform the card issuer of a financial transaction which has completed at the point of service.

d) A financial advice response message shall be sent in response to a financial advice message. A financial advice response message indicates if the card issuer accepts or rejects the transfer of financial liability.

e) Financial notification messages shall be used to inform the card issuer of a financial transaction which has completed at the point of service. There is no response message to a financial notification message.

f) The function code shall be used to indicate the type of financial transaction and whether the amount, transaction is the same or different from any previously authorized amount (see table 2).

g) The following types of financial transactions are defined:

i) Original — first or only financial transaction used.

ii) Previously authorized — a financial transaction used when an authorization was previously approved (see table 2).

iii) Resubmission — a financial transaction used to reenter a previous financial transaction that was denied or rejected (see table 2).

iv) Representment — a financial transaction originated by an acquirer to partially or wholly recover funds charged back to the acquirer by a card issuer in a chargeback (see table 2).

Table 2 — Amounts in types of financial transaction messages

In request, advice and notification messages:

Financial type	Function code	Amount, transaction	Original amount, transaction
original	200	transaction amount	--
previously authorized	201,202	new amount	originally authorized amount
resubmission	203,204	transaction amount	--
representment	205,206,207	transaction amount	amount of chargeback

In response messages:

Financial 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

h) The following types of financial transaction decisions are defined:

- i) Full approval — a financial transaction where the response from the card issuer indicates approval of the originally requested amount (see table 2).
- ii) Partial approval — a financial transaction where the response from the card issuer indicates approval of an amount less than the originally requested amount (see table 2).
- iii) Declined or rejected — a financial transaction where the request for approval is declined or the financial request or advice message is rejected (see table 2).

Table 2 identifies the usage of amount, transaction and original amount, transaction within these financial message types.

4.1.3.3 File action message class

A file action message shall be used to add, change, delete or replace a file or record. In addition, file action messages may be used to 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.

4.1.3.4 Reversal message class

A reversal shall be used to partially or completely nullify the effects of a previous financial or authorization transaction. All reversals shall use the 14xx message series.

A reversal shall use the advice or notification messages since the activity has already occurred. The following applies to all reversals:

- a) A reversal advice or notification shall be initiated by an acquirer. Message reason codes are used to indicate the reason for the reversal (see clause A.7).
- b) The amount, transaction data element in a reversal advice or notification shall contain the amount to be reversed and shall be less than or equal to the original amount as shown in table 3.
- c) Whenever the acquirer times out waiting for a response to an authorization or financial transaction request or advice, a reversal advice or notification of the transaction shall be sent (see 5.2.12).

d) A reversal advice response message shall be sent to a reversal advice message. A reversal advice shall not be declined by the card issuer, except for specific reasons as defined in clause A.1.

e) A reversal shall not be reversed.

f) The processing code in a reversal advice or notification shall be the same as presented in the original message. If the original transaction was a debit, the reversal also indicates debit; if the original transaction was a credit, the reversal also indicates a credit.

Table 3 shows the use of amounts in reversal messages:

Table 3 — Amounts in reversal messages

Type of reversal	Amount, transaction	Original amount, transaction
full	amount reversed	--
partial	amount reversed	original transaction amount

g) Only 11xx or 12xx transactions shall be reversed.

h) Table 4 shows 12xx financial transactions that are not reversals :

Table 4 — Financial transactions

Function	Processing code	Function code
adjustment	02,22	200
return	20	200
representment	--	205, 206, 207

4.1.3.5 Chargeback message class

A chargeback shall be used to partially or completely nullify a previous 12xx financial transaction. All chargebacks shall use the 14xx message series.

A chargeback shall be an advice or notification as the activity has already occurred.

The following applies to all chargebacks:

- a) A chargeback advice or notification shall only be initiated by the card issuer. It shall be used when the card issuer determines that a customer dispute exists, or that an error or a violation of rules has been committed. Message reason codes are used to indicate the reason for the chargeback (see clause A.7).
- b) A chargeback advice or notification 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 an authorization transaction.
- c) A chargeback advice response shall be sent in response to a chargeback advice message. A chargeback advice shall not be declined by the receiver except for specific reasons as defined in clause A.1 although the original transaction may be represented by the acquirer.
- d) The amount, transaction data element in a chargeback shall be the amount to be charged back and shall be less than or equal to the original amount, transaction as shown in table 5 following:

Table 5 — Amounts in charge back messages

Type of chargeback	Amount, transaction	Original amount, transaction
full	amount charged back	--
partial	amount charged back	original transaction amount

e) The processing code in a chargeback may be used to indicate an adjustment where the card issuer corrects a chargeback, partially or completely, that was submitted in error. All card issuer initiated adjustments are chargeback (14xx) transactions. The processing code in a chargeback may differ from the value in the original transaction. The processing code used in a chargeback shall be selected as follows:

- i) to charge back a 12xx financial transaction, the chargeback shall contain the same processing code value as the transaction that is being

charged back. If the original transaction was a debit, the chargeback shall also indicate a debit. If the original transaction was a credit, the chargeback shall also indicate a credit.

ii) to cancel, either partially or completely, a previous chargeback that was submitted in error, the card issuer shall initiate a subsequent chargeback containing one of the two adjustment processing codes. If the original transaction was a debit, this subsequent chargeback shall indicate a credit. If the original transaction was a credit, this subsequent chargeback shall indicate a debit.

f) If the transaction that is being charged back requires a response, this response message shall be sent before the chargeback is generated.

g) A card issuer may charge back an original transaction plus any subsequent representment(s) submitted by the acquirer. A separate chargeback message shall be used for each.

h) This International Standard specifies no limits on the timeframe or the number of chargebacks and representments that may be exchanged between an acquirer and card issuer.

4.1.3.6 Reconciliation message class

A reconciliation transaction provides financial totals between one acquirer and one card issuer. The following applies to all reconciliation messages:

a) Reconciliation request messages request the reconciliation totals (number and value).

b) A reconciliation request response message shall be sent in response to a reconciliation request message. A reconciliation request response message shall contain the requested totals, if available. The totals contained in a reconciliation request response message 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) Reconciliation request response messages shall indicate one of the following results:

- i) Totals provided — all amounts and number data elements shall be returned with the values from the institution sending the reconciliation request response message.
- ii) Totals not available — all amount and number data elements shall be returned with zero values.

d) Reconciliation advice messages request the confirmation of totals (number and value). The totals contained in a reconciliation advice message indicates an originating institution's position as either an acquirer or card issuer (but not both) as defined by the message type identifier.

e) A reconciliation advice response message shall be sent in response to a reconciliation advice message.

f) Reconciliation advice response messages shall indicate one of the following results:

i) Reconciled, in balance — only the amount, net reconciliation data element shall be returned in the reconciliation advice response message.

ii) Reconciled, out of balance — all amount and number data elements shall be returned with the values from the institution sending the reconciliation advice response message.

iii) Totals not available — all amount and number data elements shall be returned with zero values.

g) Reconciliation notification messages shall be used to provide totals (number and value). A response message shall not be sent.

h) Two types of reconciliation transactions are defined:

i) A checkpoint reconciliation transaction shall be indicated by the function code "501" or "503". A checkpoint reconciliation period shall be identified with the reconciliation indicator. The date, reconciliation remains unchanged in a checkpoint reconciliation.

ii) A final reconciliation shall be indicated by the function code "500" or "502". A final reconciliation period shall be identified with the date, reconciliation. A final reconciliation period may contain any number of checkpoint reconciliation periods.

The final reconciliation amounts shall be the sum of all the financial amounts from the individual transactions identified with the same date, reconciliation. The final reconciliation counts shall be the number of transactions identified with the same date, reconciliation.

i) A checkpoint reconciliation transaction may be preceded by a network management transaction (18xx) indicating checkpoint and the next reconciliation indicator. Any transaction initiated after completion of the network management transaction indicating checkpoint shall contain the new reconciliation indicator (see 5.3.2, figure 2).

j) A final reconciliation transaction may be preceded by a network management transaction (18xx) indicating cutover and the new date, reconciliation. Any transaction initiated after completion of the network management transaction indicating cutover shall contain the new date, reconciliation (see 5.3.2, figure 2).

k) The calculation of amount, net reconciliation shall be achieved by netting the debit and credit amounts in the reconciliation message (see table 11).

l) Reconciliation in multiple currencies shall use a separate reconciliation transaction for each currency.

4.1.3.7 Administrative message class

Administrative messages shall be used when two institutions have identified a need for the exchange of information e.g., retrieval requests.

4.1.3.8 Fee collection message class

Fee collection messages shall be used to collect or disburse miscellaneous service fees. All fee collection messages shall use the 17xx messages series.

The following applies to all fee collection messages:

a) Fee collection messages may be in either direction; acquirer to card issuer or card issuer to acquirer.

b) A fee collection message shall not be declined by the receiver except for specific reasons as defined in clause A.1.

c) Fee collection messages have a financial impact and affect reconciliation totals (see table 11). They shall not affect a cardholder account.

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

4.1.3.9 Network management message class

Network management messages shall be used to control the system security and operating condition of the interchange network and may be initiated by any interchanging party. The types of network management messages are:

a) system condition messages — may be 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.

b) system security messages — may be 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).

c) system accounting messages — may be used to identify the end of a reconciliation period. These messages may be used as part of a reconciliation process (see 5.3.2). System accounting messages shall not be declined by the receiver unless for specific reasons as defined in clause A.1.

d) system audit control messages — may be used to test integrity of interchange links and/or used as part of an integrity check or failure recovery scheme.

Table 6 — Message type identifiers

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1100	authorization request	requests approval for an authorization transaction	acquirer	issuer	--
1101	authorization request repeat				
1110	authorization request response	carries the answer to an authorization request	issuer	acquirer	shall be sent in response to a 1100 or a 1101
1120	authorization advice	advises of an authorization carried out on behalf of the card issuer	acquirer	issuer	
1121	authorization advice repeat				
1130	authorization advice response	carries the answer to an authorization advice	issuer	acquirer	shall be sent in response to a 1120 or a 1121
1140	authorization notification	notifies of an authorization action	acquirer	issuer	

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1200	financial request	requests approval for a financial transaction	acquirer	issuer	--
1201	financial request repeat				
1210	financial request response	carries the answer to a financial request	issuer	acquirer	shall be sent in response to a 1200 or a 1201
1220	financial advice	advises of a financial transaction carried out on behalf of the card issuer	acquirer	issuer	
1221	financial advice repeat				
1230	financial advice response	carries the answer to a financial advice	issuer	acquirer	shall be sent in response to a 1220 or a 1221
1240	financial notification	notifies of a financial action	acquirer	issuer	

Table 6 — Message type identifiers, continued

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1304	file action request	requests a file be updated	sender	receiver	--
1305	file action request repeat				
1314	file action request response	carries the answer to a file action request	receiver	sender	shall be sent in response to a 1304 or a 1305
1324	file action advice	advises of what was added, deleted or replaced in a file or record	sender	receiver	
1325	file action advice repeat				
1334	file action advice response	carries the answer to a file action advice	receiver	sender	shall be sent in response to a 1324 or a 1325
1344	file action notification	notifies of a file action	sender	receiver	

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1420	reversal advice	reverses an earlier authorization or financial transaction	acquirer	issuer	--
1421	reversal advice repeat				
1430	reversal advice response	carries the answer to a reversal advice	issuer	acquirer	shall be sent in response to a 1420 or a 1421
1440	reversal notification	notifies of a reversal action	acquirer	issuer	

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1422	chargeback advice	charges back an earlier financial transaction	issuer	acquirer	--
1423	chargeback advice repeat				
1432	chargeback advice response	carries the answer to a chargeback advice	acquirer	issuer	shall be sent in response to a 1422 or a 1423
1442	chargeback notification	notifies of a chargeback action	issuer	acquirer	

Table 6 — Message type identifiers, continued

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1500	acquirer reconciliation request	acquirer requests card issuer's totals (number and value) for the last reconciliation period	acquirer	issuer	--
1501	acquirer reconciliation request repeat				
1510	acquirer reconciliation request response	carries card issuer's totals (number and value) in response to a reconciliation request message	issuer	acquirer	shall be sent in response to a 1500 or a 1501
1520	acquirer reconciliation advice	advises of acquirer's totals (number and value) for the last reconciliation period	acquirer	issuer	
1521	acquirer reconciliation advice repeat				
1530	acquirer reconciliation advice response	carries the answer to a reconciliation advice message	issuer	acquirer	shall be sent in response to a 1520 or a 1521

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1540	acquirer reconciliation notification	notifies the card issuer of the acquirer's totals (number and value) for the last reconciliation period	acquirer	issuer	
1502	card issuer reconciliation request	card issuer requests acquirer's totals (number and value) for the last reconciliation period	issuer	acquirer	--
1503	card issuer reconciliation request repeat				
1512	card issuer reconciliation request response	carries acquirer's totals (number and value) in response to a reconciliation request message	acquirer	issuer	shall be sent in response to a 1502 or a 1503
1522	card issuer reconciliation advice	advises of card issuer's totals (number and value) for the last reconciliation period	issuer	acquirer	
1523	card issuer reconciliation advice repeat				
1532	card issuer reconciliation advice response	carries the answer to a reconciliation advice message	acquirer	issuer	shall be sent in response to a 1522 or a 1523
1542	card issuer reconciliation notification	notifies the acquirer of the card issuer's totals (number and value) for the last reconciliation period	issuer	acquirer	

Table 6 — Message type identifiers, continued

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1604	administrative request	requests information to support the interchange network	sender	receiver	--
1605	administrative request repeat				
1614	administrative request response	carries the answer to an administrative request	receiver	sender	shall be sent in response to a 1604 or a 1605
1624	administrative advice	advises of information to support the interchange network	sender	receiver	
1625	administrative advice repeat				
1634	administrative advice response	carries the answer to an administrative advice	receiver	sender	shall be sent in response to a 1624 or a 1625
1644	administrative notification	notifies of an administrative action	sender	receiver	

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1720	acquirer fee collection advice	advises of a service fee due to be collected	acquirer	issuer	--
1721	acquirer fee collection advice repeat				
1730	acquirer fee collection advice response	carries the answer to an acquirer fee collection advice	issuer	acquirer	shall be sent in response to a 1720 or a 1721
1740	acquirer fee collection notification	notifies of a service fee due to be collected	acquirer	issuer	
1722	issuer fee collection advice	advises of a service fee due to be collected	issuer	acquirer	
1723	issuer fee collection advice repeat				
1732	issuer fee collection advice response	carries the answer to an issuer fee collection advice	acquirer	issuer	shall be sent in response to a 1722 or a 1723
1742	issuer fee collection notification	notifies of a service fee due to be collected	issuer	acquirer	

Table 6 — Message type identifiers, concluded

MTI	MESSAGE	PURPOSE	FROM	TO	USAGE
1804	network management request	requests a network management activity	sender	receiver	--
1805	network management request repeat				
1814	network management request response	carries the answer to a network management request	receiver	sender	shall be sent in response to a 1804 or a 1805
1824	network management advice	advises of a network management activity	sender	receiver	
1825	network management advice repeat				
1834	network management advice response	carries the answer to a network management advice	receiver	sender	shall be sent in response to a 1824 or a 1825
1844	network management notification	notifies of a network management action	sender	receiver	

4.2 Bit maps

The second message component is one or two bit maps each consisting of 64 bits. Each bit signifies the presence (1) or the absence (0) in the message of the data element associated with that particular bit.

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 shall be signified by a "1" in bit 01 of the primary bit map (see figure 1).

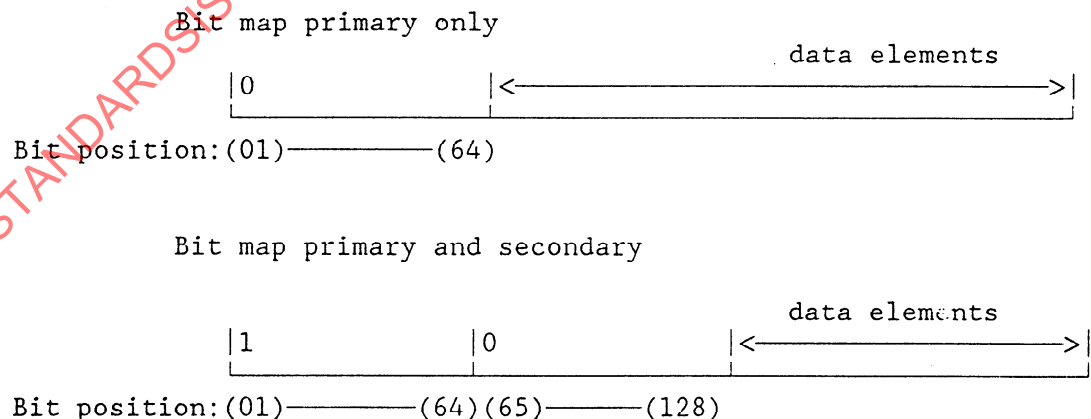


Figure 1 — Bit maps

Table 7A shows:

- a) the data element assignment to each bit;
- b) the data element length, format and attribute specification as outlined in 4.3 and in the legend preceding the table.

Table 7B shows:

- a) the mandatory or conditional presence specification for each message type identifier. "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) the conditional status, shown as "nn" which references table 8. If the condition identified in table 8 applies, then the data element shall be present, otherwise its inclusion in a message is subject to bilateral agreement.

Nothing in table 7B prohibits the use of any data element within any message. Messages may include additional data elements to those specified as mandatory and/or conditional. The use of these additional data elements in a message is subject to bilateral agreement.

Legend for abbreviations used under attribute in Tables 7A and 9 (see ISO 7372):

- a = alphabetical characters, A through Z and a through z
- n = numeric digits, 0 through 9
- p = pad character, space
- s = special characters
- an = alphabetic and numeric characters
- as = alphabetic and special characters
- ns = numeric and special characters
- anp = alphabetic, numeric and space (pad) characters

- ans = alphabetic, numeric and special characters
- MM = Month, 01 through 12
- DD = Day, 01 through 31
- YY = Year, 00 through 99
- hh = Hour, 00 through 23
- mm = Minute, 00 through 59
- ss = Second, 00 through 59
- LL = length of variable data element that follows, 01 through 99
- LLL = length of variable data element that follows, 001 through 999
- VAR = variable length data element
- 3 = fixed length of three characters
- ..17 = variable length up to maximum 17 characters. All variable length fields shall in addition contain two or three positions at the beginning of the data element to identify the number of positions following to the end of that data element.
- x = "C" for credit, "D" for debit and shall always be associated with a numeric amount data element, i.e., x+ n 16 in amount, net reconciliation means prefix "C" or "D" and 16 digits of amount, net reconciliation.
- b = binary representation of data
- z = Tracks 2 and 3 code set as defined in ISO 4909 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 spaces. In all "b" data elements, blocks of 8 bits 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 7A — Bit maps (in numerical order)

Bit	Data Element Name	Format	Attribute
1	(see 4.2 for usage)		b 8
2	primary account number	LLVAR	n..19
3	processing code		n 6
4	amount, transaction		n 12
5	amount, reconciliation		n 12
6	amount, cardholder billing		n 12
7	date and time, transmission	MMDDhhmmss	n 10
8	amount, cardholder billing fee		n 8
9	conversion rate, reconciliation		n 8
10	conversion rate, cardholder billing		n 8
11	systems trace audit number		n 6
12	date and time, local transaction	YYMMDDhhmmss	n 12
13	date, effective	YYMM	n 4
14	date, expiration	YYMM	n 4
15	date, settlement	YYMMDD	n 6
16	date, conversion	MMDD	n 4
17	date, capture	MMDD	n 4
18	merchant type		n 4
19	country code, acquiring institution		n 3
20	country code, primary account number		n 3
21	country code, forwarding institution		n 3
22	point of service data code		an 12
23	card sequence number		n 3
24	function code		n 3
25	message reason code		n 4
26	card acceptor business code		n 4
27	approval code length		n 1
28	date, reconciliation	YYMMDD	n 6
29	reconciliation indicator		n 3
30	amounts, original		n 24
31	acquirer reference data	LLVAR	ans..99

Table 7A — Bit maps (in numerical order), continued

Bit	Data Element Name	Format	Attribute
32	acquirer institution identification code	LLVAR	n..11
33	forwarding institution identification code	LLVAR	n..11
34	primary account number, extended	LLVAR	ns..28
35	track 2 data	LLVAR	z..37
36	track 3 data	LLLVAR	z..104
37	retrieval reference number		anp 12
38	approval code		anp 6
39	action code		n 3
40	service code		n 3
41	card acceptor terminal identification		ans 8
42	card acceptor identification code		ans 15
43	card acceptor name/location	LLVAR	ans..99
44	additional response data	LLVAR	ans..99
45	track 1 data	LLVAR	ans..76
46	amounts, fees	LLLVAR	ans..204
47	additional data - national	LLLVAR	ans..999
48	additional data - private	LLLVAR	ans..999
49	currency code, transaction		a 3 or n 3
50	currency code, reconciliation		a 3 or n 3
51	currency code, cardholder billing		a 3 or n 3
52	personal identification number (PIN) data		b 8
53	security related control information	LLVAR	b..48
54	amounts, additional	LLLVAR	ans..120
55	integrated circuit card system related data	LLLVAR	b..255
56	original data elements	LLVAR	n..35
57	authorization life cycle code		n 3
58	authorizing agent institution identification code	LLVAR	n..11
59	transport data	LLLVAR	ans..999
60-61	reserved for national use	LLLVAR	ans..999 ¹
62-63	reserved for private use	LLLVAR	ans..999 ¹
64	message authentication code field		b 8
65	reserved for ISO use		b 8

Table 7A — Bit maps (in numerical order), continued

Bit	Data Element Name	Format	Attribute
66	amounts, original fees	LLLVAR	ans..204
67	extended payment data		n 2
68	country code, receiving institution		n 3
69	country code, settlement institution		n 3
70	country code, authorizing agent institution		n 3
71	message number		n 8
72	data record	LLLVAR	ans..999
73	date, action	YYMMDD	n 6
74	credits, number		n 10
75	credits, reversal number		n 10
76	debits, number		n 10
77	debits, reversal number		n 10
78	transfer, number		n 10
79	transfer, reversal number		n 10
80	inquiries, number		n 10
81	authorizations, number		n 10
82	inquiries, reversal number		n 10
83	payments, number		n 10
84	payments, reversal number		n 10
85	fee collections, number		n 10
86	credits, amount		n 16
87	credits, reversal amount		n 16
88	debits, amount		n 16
89	debits, reversal amount		n 16
90	authorizations, reversal number		n 10
91	country code, transaction destination institution		n 3
92	country code, transaction originator institution		n 3
93	transaction destination institution identification code	LLVAR	n..11
94	transaction originator institution identification code	LLVAR	n..11
95	card issuer reference data	LLVAR	ans..99
96	key management data	LLLVAR	b..999

Table 7A — Bit maps (in numerical order), concluded

Bit	Data Element Name	Format	Attribute
97	amount, net reconciliation		x + n 16
98	payee		ans 25
99	settlement institution identification code	LLVAR	ans..11
100	receiving institution identification code	LLVAR	n..11
101	file name	LLVAR	ans..17
102	account identification 1	LLVAR	ans..28
103	account identification 2	LLVAR	ans..28
104	transaction description	LLLVAR	ans..100
105	credits, chargeback amount		n 16
106	debits, chargeback amount		n 16
107	credits, chargeback number		n 10
108	debits, chargeback number		n 10
109	credits, fee amounts	LLVAR	ans..84
110	debits, fee amounts	LLVAR	ans..84
111-115	reserved for ISO use	LLLVAR	ans..999 ¹
116-122	reserved for national use	LLLVAR	ans..999 ¹
123-127	reserved for private use	LLLVAR	ans..999 ¹
128	message authentication code field		b 8

¹ Attribute for each bit.

Table 7B — Bit maps (by message type)

AUTHORIZATION MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1100 1101	1110	1120 1121	1130	1140
1	(see 4.2 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
11	systems trace audit number	M	ME	M	ME	M
12	date and time, local transaction	M	ME	M	ME	M
13	date, effective	02		02		02
14	date, expiration	02		02		02
22	point of service data code	M		M		M
23	card sequence number	02		02		02
24	function code	M		M		M
26	card acceptor business code	M		M		M
27	approval code length	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
34	primary account number, extended	15	16	15	16	15
35	track 2 data	06		06		06
36	track 3 data	06		06		06
39	action code		M	M	M	M
40	service code	02		02		02
41	card acceptor terminal identification		16		16	
42	card acceptor identification code		16		16	
45	track 1 data	06		06		06
46	amounts, fees	01	01	01	01	01
49	currency code, transaction	26	16	26	16	26
58	authorizing agent institution identification code		20	20		20
59	transport data		16		16	
100	receiving institution identification code	19	19	19	19	19

Table 7B — Bit maps (by message type), continued

FINANCIAL MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1200 1201	1210	1220 1221	1230	1240
1	(see 4.2 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
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
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
22	point of service data code	M		M		M
23	card sequence number	02		02		02
24	function code	M		M		M
26	card acceptor business code	M		M		M
27	approval code length	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
34	primary account number, extended	15	16	15	16	15
35	track 2 data	06		06		06
36	track 3 data	06		06		06
37	retrieval reference number		16		16	
39	action code		M	M	M	M
40	service code	02		02		02
41	card acceptor terminal identification		16		16	
42	card acceptor identification code		16		16	
43	card acceptor name/location	M		M		M
45	track 1 data	06		06		06
46	amounts, fees	01	01	01	01	01
49	currency code, transaction	M	ME	M	ME	M
50	currency code, reconciliation		05		05	05
51	currency code, cardholder billing	04	04	04	04	04
58	authorizing agent institution identification code		20	20		20
59	transport data		16		16	
100	receiving institution identification code	19	19	19	19	19

Table 7B — Bit maps (by message type), continued

FILE ACTION MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1304 1305	1314	1324 1325	1334	1344
1	(see 4.2 for usage)					
2	primary account number	28	16	28	16	28
11	systems trace audit number	M	ME	M	ME	M
12	date and time, local transaction	M	ME	M	ME	M
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	
71	message number		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

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Table 7B — Bit maps (by message type), continued

REVERSAL MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1420 1421	1430	1440		
1	(see 4.2 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		
9	conversion rate, reconciliation		05	05		
10	conversion rate, cardholder billing	04	04	04		
11	systems trace audit number	M	ME	M		
12	date and time, local transaction	M	ME	M		
16	date, conversion		05	05		
24	function 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		
34	primary account number, extended	15	16	15		
38	approval code	17		17		
39	action code		M	M		
41	card acceptor terminal identification		16			
42	card acceptor identification code		16			
46	amounts, fees	01	01	01		
49	currency code, transaction	03	16	03		
50	currency code, reconciliation		05	05		
51	currency code, cardholder billing	04	04	04		
56	original data elements	M		M		
58	authorizing agent institution identification code	17		17		
59	transport data		16			
94	transaction originator institution identification code	09	16	09		
100	receiving institution identification code	19	19	19		

Table 7B — Bit maps (by message type), continued

CHARGEBACK MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1422 1423	1432	1442		
1	(see 4.2 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		
9	conversion rate, reconciliation		05	05		
11	systems trace audit number	M	ME	M		
12	date and time, local transaction	M	ME	M		
16	date, conversion		05	05		
24	function 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		
34	primary account number, extended	15	16	15		
37	retrieval reference number	17		17		
39	action code		M	M		
46	amounts, fees	01	01	01		
49	currency code, transaction	03	16	03		
50	currency code, reconciliation		05	05		
56	original data elements	M		M		
59	transport data		16			
94	transaction originator institution identification code	11	16	11		
100	receiving institution identification code	19	19	19		

Table 7B — Bit maps (by message type), continued

RECONCILIATION MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1500 1501	1510	1520 1521	1530	1540
		1502 1503	1512	1522 1523	1532	1542
1	(see 4.2 for usage)					
2	primary account number	M	ME	M	ME	M
11	systems trace audit number	M	ME	M	ME	M
12	date and time, local transaction	M	ME	M	ME	M
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	
50	currency code, reconciliation	M	ME	M	ME	M
59	transport data		16		16	
74	credits, number		M	M	13	M
75	credits, reversal number		M	M	13	M
76	debits, number		M	M	13	M
77	debits, reversal number		M	M	13	M
86	credits, amount		M	M	13	M
87	credits, reversal amount		M	M	13	M
88	debits, amount		M	M	13	M
89	debits, reversal amount		M	M	13	M
97	amount, net reconciliation		M	M	M	M
100	receiving institution identification code	19	19	19	19	19
105	credits, chargeback amount		M	M	13	M
106	debits, chargeback amount		M	M	13	M
107	credits, chargeback number		M	M	13	M
108	debits, chargeback number		M	M	13	M
109	credits, fee amounts		01	01	13	01
110	debits, fee amounts		01	01	13	01

Table 7B — Bit maps (by message type), continued

ADMINISTRATIVE MESSAGES		MESSAGE TYPE IDENTIFIERS				
BIT	DATA ELEMENT NAME	1604 1605	1614	1624 1625	1634	1644
1	(see 4.2 for usage)					
11	systems trace audit number	M	ME	M	ME	M
12	date and time, local transaction	M	ME	M	ME	M
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	
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

FEE COLLECTION MESSAGES		MESSAGE TYPE IDENTIFIERS					
BIT	DATA ELEMENT NAME	1720 1721	1730	1740	1722 1723	1732	1742
1	(see 3.2 for usage)						
2	primary account number	M	ME	M	M	ME	M
11	systems trace audit number	M	ME	M	M	ME	M
12	date and time, local transaction	M	ME	M	M	ME	M
24	function code	M		M	M		M
28	date, reconciliation		12	12		12	12
29	reconciliation indicator		14	23		14	23
32	acquiring institution identification code	M	ME	M	M	ME	M
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	ME	M
59	transport data		16			16	
100	receiving institution identification code	19	19	19	19	19	19

Table 7B — Bit maps (by message type), concluded

NETWORK MANAGEMENT MESSAGES		MESSAGE TYPE IDENTIFIERS					
BIT	DATA ELEMENT NAME	1804 1805	1814	1824 1825	1834	1844	
1	(see 4.2 for usage)						
11	systems trace audit number	M	ME	M	ME	M	
12	date and time, local transaction	M	ME	M	ME	M	
24	function code	M		M		M	
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		
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	

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Table 8 — Conditions used in table 7B

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 present in the track 1, track 2 or track 3 data.
03	Mandatory, shall contain the same data as the original authorization (11xx) or financial (12xx) 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 was not provided in the request or advice message.
06	Mandatory if track data is captured at the point of service.
07	Mandatory if the primary account number conforms to ISO 7812.
08	Mandatory in a replacement transaction, previously authorized transaction, representment, partial reversal or partial chargeback. Mandatory in a supplementary authorization, if available.
09	Mandatory when the transaction originator institution is not the same as the acquiring institution.
10	Mandatory when the forwarding institution is not the same as the institution originating the message.
11	Mandatory when the transaction originator institution is not the same as the institution identified in either the PAN or PAN extended.
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 when the primary account number begins with "59" as defined in ISO 4909 and therefore has a field separator.
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 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 transaction is not the same institution identified in either the primary account number or the primary account number, extended.
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 3xxxxx.
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.

4.3 Data element directory

The third message component and its data content is made up of series of data elements. Table 7B specifies those data elements which are present, according to the message type identifier.

Messages are reconstructed using the bit map as 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 shall be 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 data elements in table 9 shall be used in the messages specified in table 7B

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Table 9 — Data element directory

Name	Description	Representation	Bit
Account identification 1	A series of digits and/or characters used to identify a customer account or relationship (e.g., for the "from" account).	ans..28 (see 4.4.1 and 4.4.5)	102
Account identification 2	A series of digits and/or characters used to identify a customer account or relationship (e.g., for the "to" account).	ans..28 (see 4.4.1 and 4.4.5)	103
Account type, additional amounts	Code used to describe the accounts affected. Contained in amounts, additional data element	n 2 (see 4.4.12)	54 ¹
Acquirer reference data	Data supplied by an acquirer in an authorization or financial request, advice or notification that may be required to be provided in a subsequent transaction.	ans..99	31
Acquiring institution identification code	Code identifying the acquirer.	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	32
Action code	A code which defines the action taken or to be taken as well as the reason for taking this action.	n 3 (see 4.4.7, 4.4.15 and A.1)	39
Additional data - national	Reserved for national organizations to define data unique to country applications.	ans..999 (see 4.4.2) The use of this data element is under the control of national bodies.	47
Additional data - private	Reserved for private data.	ans..999 (see 4.4.2) The use of this data element is determined by bilateral agreement.	48
Additional response data	Other data (e.g., a telephone number) required in response.	ans..99 (see 4.4.1)	44
Amount, additional amounts	Amount contained in the amounts, additional data element.	x + n 12 (see 4.4.8 and 4.4.12)	54 ¹
Amount, cardholder billing	Amount billed to the cardholder in the currency of the cardholder account exclusive of cardholder billing fees.	n 12 (see 4.4.8 and 4.4.13)	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 4.4.8 and 4.4.13)	8
Amount, fee	Amount of the fee within the fee type code. Contained in the amounts, fees data element.	x + n 8 (see 4.4.17)	46 ¹
Amount, fee total	The sum amount of all fees of the fee type specified. Contained in the credits, fee amounts and debits, fee amounts data elements.	n 12 (see 4.4.11 and 4.4.19)	109 ¹ 110 ¹
Amount, net reconciliation	The net value of all gross amounts.	x + n 16 (see 4.4.8, and 4.4.11)	97
Amount, reconciliation	Funds to be transferred between the acquirer and card issuer equal to the amount, transaction in the currency of reconciliation.	n 12 (see 4.4.8 and 4.4.11)	5
Amount, reconciliation fee	Fee to be transferred between the acquirer and card issuer equal to the amount, fee in the currency of reconciliation. Contained in the amounts, fees data element.	x + n 8 (see 4.4.8, 4.4.11 and 4.4.17)	46 ¹

Table 9 — Data element director, continued

Name	Description	Representation	Bit
Amount, transaction	Funds requested by the cardholder in the local currency of the acquirer or source location of the transaction, exclusive of amounts, fees.	n 12 (see 4.4.8 and 4.4.11)	4
Amount type, additional amounts	Identifies the kind of amount contained in the amounts, additional data element.	n 2 (see 4.4.8, 4.4.12, 4.4.15 and A.2)	54 ¹
Amounts, additional	Information on up to six amounts and related account data for which specific data elements have not been defined.	ans..120 (see 4.4.2, 4.4.8, 4.4.12 and 4.4.15)	54
Amounts, fees	Fees associated with this transaction.	ans..204 (see 4.4.2, 4.4.8, 4.4.11, 4.4.17, 4.4.18 and A.5)	46
Amounts, original	The amount data elements from the original transaction (see Tables 1, 2, 3 and 5).	n 24 (see 4.4.8 and 4.4.10)	30
Amounts, original fees	The original amounts, fees necessary to perform a partial reversal, partial chargeback or partial approval or to replace or supplement a previously authorized transaction.	ans..204 (see 4.4.8, 4.4.11, 4.4.18 and A.5)	66
Approval code	Code assigned by the authorizing institution indicating approval.	anp 6	38
Approval code length	Maximum length of the approval code which the acquirer may accommodate. The card issuer or agent shall limit the approval code to this length.	n 1	27
Authorization life cycle code	A value in calendar days, hours or minutes which defines the time period for which the acquirer is requesting guarantee of funds, or that the card issuer shall guarantee funds for a financial transaction which may follow.	n 3 (see A.3 and 4.4.15)	57
Authorizations, number	The sum number of all authorization transactions.	n 10 (see 4.4.11)	81
Authorizations, reversal number	The sum number of all reversal transactions processed where the message type identifier in the original data elements indicated an authorization (1xxx).	n 10	90
Authorizing agent institution identification code	Code identifying the authorizing agent institution.	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	58
Card acceptor business code	Code classifying the type of business being done by the card acceptor for this transaction.	n 4 (see A.4 and 4.4.15)	26
Card acceptor identification code	Code identifying the card acceptor.	ans 15	42
Card acceptor name/location	The name and location of the card acceptor as known to the cardholder.	ans..99 (see 4.4.1 and 4.4.9)	43
Card acceptor terminal identification	Unique code identifying a terminal at the card acceptor location.	ans 8	41
Card issuer reference data	Data supplied by a card issuer in an authorization or financial response message, or in a chargeback, that may be required to be provided by the acquirer in subsequent transactions.	ans..99	95
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	23

Table 9 — Data element directory, continued

Name	Description	Representation	Bit
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 (see 4.4.14)	10
Conversion rate, fee	The factor used in the conversion from fee amount to reconciliation fee amount. The amount, fee is multiplied by conversion rate, fee to determine the amount, reconciliation fee. Contained in the amounts, fees data element.	n 8 (see 4.4.14 and 4.4.17)	46 ¹
Conversion rate, reconciliation	The factor used in the conversion from transaction to reconciliation amount. The amount, transaction is multiplied by conversion rate, reconciliation to determine the amount, reconciliation.	n 8 (see 4.4.14)	9
Country code, acquiring institution	The code of the country where the acquiring institution is located (see ISO 3166).	n 3 (see 4.4.4)	19
Country code, authorizing agent institution	The code of the country where the authorizing agent institution is located (see ISO 3166).	n 3 (see 4.4.4)	70
Country code forwarding institution	The code of the country where forwarding institution is located (see ISO 3166).	n 3 (see 4.4.4)	21
Country code, primary account number(PAN)	The code of the country where the card issuing institution is located (see ISO 3166).	n 3 (see 4.4.4)	20
Country code, receiving institution	The code of the country where receiving institution is located (see ISO 3166).	n 3 (see 4.4.4)	68
Country code, settlement institution	The code of the country where settlement institution is located (see ISO 3166).	n 3 (see 4.4.4)	69
Country code, transaction destination institution	The code of the country where the transaction destination is located (see ISO 3166).	n 3 (see 4.4.4)	91
Country code, transaction originator institution	The code of the country where the transaction originator is located (see ISO 3166).	n 3 (see 4.4.4)	92
Credits, amount	The sum amount of amount, transaction in all financial transactions exclusive of any fees where positions 1-2 of the processing code in the financial transaction indicated a credit (20-29).	n 16 (see 4.4.8 and 4.4.11)	86
Credits, chargeback amount	The sum amount of amount, transaction in all chargeback transactions exclusive of any fees where positions 1-2 of the processing code in the chargeback transaction indicated a debit (00-19).	n 16 (see 4.4.8 and 4.4.11)	105
Credits, chargeback number	The sum number of all chargeback transactions where positions 1-2 of the processing code in the chargeback transaction indicated a debit (00-19).	n 10 (see 4.4.11)	107
Credits, fee amounts	The sum amount of amounts, fees in all authorization, financial reversal and fee collection transactions where the amount, fee, x, indicated a credit, "C".	ans.. 84 (see 4.4.8, 4.4.11, 4.4.19 and A.5)	109
Credits, number	The sum number of all financial transactions where positions 1-2 of the processing code in the financial transaction indicated a credit (20-29).	n 10 (see 4.4.11)	74
Credits, reversal amount	The sum amount of amount, transaction of all reversal transactions exclusive of any fees where positions 1-2 of the processing code in the reversal transaction indicated a debit (00-19).	n 16 (see 4.4.8 and 4.4.11)	87
Credits, reversal number	The sum number of all reversal transactions where positions 1-2 of the processing code in the reversal transaction indicated a debit (00-19).	n 10 (see 4.4.11)	75

Table 9 — Data element directory, continued

Name	Description	Representation	Bit
Currency code, additional amounts	Code defining the currency of the amount contained in the amounts, additional data element (see ISO 4217).	a 3 or n 3 (see 4.4.8 and 4.4.12)	54 ¹
Currency code, cardholder billing	Code defining currency of amount, cardholder billing and amount, cardholder billing fee (see ISO 4217).	a 3 or n 3	51
Currency code, fee	Code defining currency of amount, fee contained in the amounts, fees data element (see ISO 4217).	a 3 or n 3 (see 4.4.17)	46 ¹
Currency code, reconciliation	Code defining currency of reconciliation (see ISO 4217).	a 3 or n 3 (see 4.4.11)	50
Currency code, reconciliation fee	Code defining the currency of amount, reconciliation fee in the amounts, fees data element (see ISO 4217).	a 3 or n 3 (see 4.4.17)	46 ¹
Currency code, transaction	The local currency of the acquirer or source location of the transaction. Currency used in amount, transaction (see ISO 4217).	a 3 or n 3	49
Data record	Other data required to be passed to support an administrative or file action message.	ans..999 (see 4.4.2)	72
Date, action	A date for a future action or a specific date such as a birth date.	n 6 YYMMDD	73
Date and time, local transaction	The local year, month, day and time the transaction takes place at the card acceptor location in authorization and financial messages.	n 12 YYMMDDhhmmss	12
Date and time, transmission	In file action, reversal, chargeback, reconciliation, administrative, fee collection and network management transactions, it is the year, month, day and time set by the initiator of the first message in the transaction. Date and time this message is sent by the message initiator. To be expressed in Coordinated Universal Time (UTC) (see ISO 8601); formerly known as Greenwich Mean Time (GMT).	n 10 MMDDhhmmss	7
Date, capture	The month and day the transaction data was processed by the acquirer.	n 4 MMDD	17
Date, conversion	The month and day the conversion rate is effective to convert the transaction amount from the original to reconciliation currency.	n 4 MMDD	16
Date, effective	The year and month in which the card becomes effective.	n 4 YYMM	13
Date, expiration	The year and month after which the card expires.	n 4 YYMM	14
Date, reconciliation	The year, month and day for which financial totals are reconciled between the acquirer and the card issuer.	n 6 YYMMDD	28
Date, settlement	The year, month and day for which funds shall be transferred between acquirer and card issuer.	n 6 YYMMDD	15
Debits, amount	The sum amount of amount, transaction in all financial transactions exclusive of any fees where positions 1-2 of the processing code in the financial transaction indicated a debit (00-19).	n 16 (see 4.4.8 and 4.4.11)	88
Debits, chargeback amount	The sum amount of amount, transaction in all chargeback transactions exclusive of any fees where positions 1-2 of the processing code in the chargeback transaction indicated a credit (20-29).	n 16 (see 4.4.8 and 4.4.11)	106
Debits, chargeback number	The sum number of all chargeback transactions where positions 1-2 of the processing code in the chargeback transaction indicated a credit (20-29).	n 10 (see 4.4.11)	108

Table 9 — Data element directory, continued

Name	Description	Representation	Bit
Debits, fee amounts	The sum amount of amount, fee in all authorization, financial, reversal and fee collection messages where the amount, fee, x, indicated a debit, "D".	ans.. 84 (see 4.4.8, 4.4.11, 4.4.19 and A.5)	110
Debits, number	The sum number of all financial transactions where positions 1-2 of the processing code in the financial transaction indicated a debit (00-19).	n 10 (see 4.4.11)	76
Debits, reversal amount	The sum amount of amount, transaction of all reversal transactions exclusive of any fees where positions 1-2 of the processing code in the reversal transaction indicated a credit (20-29).	n 16 (see 4.4.8 and 4.4.11)	89
Debits, reversal number	The sum number of all reversal transactions where positions 1-2 of the processing code in the reversal transaction indicated a credit (20-29).	n 10 (see 4.4.11)	77
Extended payment data	Number of months that the cardholder prefers to pay for this item if permitted by the card issuer.	n 2	67
Fee collections, number	The sum number of all fee collection transactions.	n 10 (see 4.4.11)	85
Fee type code	Code indicating the type of fee. Contained in the data elements amounts, fees; credits, fee amounts; and debits, fee amounts.	n 2 (see 4.4.15, 4.4.17, 4.4.19 and A.5)	46 ¹ , 109 ¹ , and 110 ¹
File name	The actual or abbreviated name of the file being accessed.	ans..17 (see 4.4.1)	101
Forwarding institution identification code	Code identifying the forwarding institution.	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	33
Function code	Code indicating the specific purpose of the message within its message class.	n 3 (see A.6 and 4.4.15)	24
Inquiries, number	The sum number of all authorization transactions processed where positions 1-2 of the processing code in the authorization transaction indicated an inquiry (30-39).	n 10 (see 4.4.11)	80
Inquiries, reversal number	The sum number of all reversal transactions processed where positions 1-2 of the processing code in the reversal transaction indicated an inquiry (30-39).	n 10 (see 4.4.11)	82
Integrated circuit card (ICC) system related data	Contains data related to integrated circuit card systems. The structure of this data element is described in ISO 10202.	b..255 (see 4.4.3)	55
Key management data	Contains data related to key management.	b..999 (see 4.4.3)	96
Merchant type	The classification of the merchant's type of business product or service. Codes to be developed within each country.	n 4	18
Message authentication code (MAC) field	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 data element. If authentication is to be used on a message, the MAC field data element shall be represented by the final bit in the final bit map of that message. The final bit of the previous bit map shall contain zero, i.e., only one MAC field data element per message and the MAC field data element shall be the last data element of the message. (See ISO 9807.)	b 8 (see 4.4.3)	64 or 128
Message number	A number assigned to a message by the transaction originator and used to monitor the integrity and continuity of the data being exchanged.	n 8	71

Table 9 — Data element directory, continued

Name	Description	Representation	Bit
Message reason code	Provides the receiver of a request, advice or notification message with the reason, or purpose, of that message. For original authorizations and financial transactions identifies why the type of message was sent (e.g., why an advice versus a request); for other messages, states why this action was taken.	n 4 (see A.7 and 4.4.15)	25
Number, fee total	The count of all fees of the fee type specified. Contained in the credits, fee amounts and debits, fee amounts data elements.	n 10 (see 4.4.19)	109 ¹ or 110 ¹
Original acquiring institution identification code	The acquiring institution identification code of the original financial transaction. Contained in the original data elements.	n..11 (see 4.4.1, 4.4.4, 4.4.6 and 4.4.16)	56 ¹
Original amount, fee	The original amount of the fee in a reversal, chargeback or partial approval. Contained in the amounts, original fees data element.	x + n 8 (see 4.4.8, 4.4.11 and 4.4.18)	66 ¹
Original amount, reconciliation	The original amount of the transaction expressed in the reconciliation currency (see tables 2, 3 and 5). Contained in the amounts, original data element.	n 12 (see 4.4.8, 4.4.10 and 4.4.11)	30 ¹
Original amount, reconciliation fee	The original amount of the fee expressed in the reconciliation currency (see tables 2, 3 and 5). Contained in the amounts, original fees data element.	x + n 8 (see 4.4.8, 4.4.11 and 4.4.18)	66 ¹
Original amount, transaction	The original amount of the transaction (see Table 2, 3 and 5). Contained in the amounts, original data element.	n 12 (see 4.4.8 and 4.4.10)	30 ¹
Original conversion rate, fee	The factor used in the conversion from transaction to reconciliation fee amount. The original amount fee is multiplied by original conversion rate, fee to determine original amount, reconciliation fee. Contained in the amounts, original fees data element.	n 8 (see 4.4.14 and 4.4.18)	66 ¹
Original currency code, fee	Code defining currency of original amount, fee. Contained in the amounts, original fees data element (see ISO 4217).	a 3 or n 3 (see 4.4.18)	66 ¹
Original currency code, reconciliation fee	Code defining currency of original amount, reconciliation fee. Contained in the amounts, original fees data element (see ISO 4217).	a 3 or n 3 (see 4.4.18)	66 ¹
Original data elements	The data elements contained in the original message, intended for transaction matching.	n..35 (see 4.4.1 and 4.4.6)	56
Original date and time, local transaction	The local date and time of the original transaction. Contained in the original data elements.	n 12 (see 4.4.6)	56 ¹
Original fee type code	Code used to indicate the type of fee. Contained in the original amounts, fees data element.	n 2 (see 4.4.15, 4.4.18 and A.5)	66 ¹
Original message type identifier	The message type identifier of the original transaction. Contained in the original data elements.	n 4 (see 4.4.6)	56 ¹
Original system trace audit number	The system trace audit number of the original transaction. Contained in the original data elements.	n 6 (see 4.4.6)	56 ¹
Payee	The third party beneficiary in a financial transaction where the processing code indicates a payment (50-59).	ans 25	98
Payments, number	The sum number of all financial transactions processed where positions 1-2 of the processing code in the financial transaction indicated a payment (50-59).	n 10 (See 4.4.11)	83
Payments, reversal number	The sum number of all reversal transactions processed where positions 1-2 of the processing code in the reversal transaction indicated a payment (50-59).	n 10 (see 4.4.11)	84

Table 9 — Data element directory, continued

Name	Description	Representation	Bit
Personal identification number (PIN) data	Used to identify the cardholder at the point of service. (See ISO 9564-1.)	b 8 (see 4.4.3)	52
Point of service data code	A series of codes intended to identify terminal capability, terminal environment and presentation security data. It shall be used to indicate specific conditions that are (or were) present at the time a transaction took place at the point of service and/or when the transaction has been initiated.	an 12 (see A.8 and 4.4.15)	22
Primary account number (PAN)	A series of digits used to identify a customer account or relationship. In reconciliation or fee collection messages this data element contains the card issuer's institution identification number only. (See ISO 7812.)	n..19 (see 4.4.1 and 4.4.5)	2
Primary account number (PAN), extended	Used only when the primary account number begins with "59" and contains a field separator as defined in ISO 4909 and shall be used to identify a customer account or relationship.	ns..28 (see 4.4.1 and 4.4.5)	34
Processing code	Code used to describe the effect of a transaction on the customer account and the accounts affected.	n 6 (see A.9 and 4.4.15)	3
Receiving institution identification code	Code identifying the receiving institution.	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	100
Reconciliation indicator	A value used to allow reconciliation of time periods within a reconciliation date, the value being subject to bilateral agreement.	n 3	29
Retrieval reference number	A reference supplied by the system retaining the original source information and used to assist in locating that information or a copy thereof.	anp 12	37
Security related control information	Identifies security management information used in the current transaction or specifies security management information to be used in future transactions.	b..48 (see 4.4.3)	53
Service code	An identification of geographic/service availability (see ISO 7813).	n 3	40
Settlement institution identification code	Code identifying settlement institution or its agent.	an..11 (see 4.4.1)	99
Systems trace audit number	A number assigned by a transaction originator to assist in identifying a transaction uniquely. The trace number remains unchanged for all messages within the transaction.	n 6	11
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 longitudinal redundancy check characters as defined therein.	ans..76 (see 4.4.1)	45
Track 2 data	The information encoded on track 2 of the magnetic stripe as defined in ISO 7813, excluding beginning and ending sentinels and longitudinal redundancy check characters as defined therein.	z..37 (see 4.4.1)	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 longitudinal redundancy check characters as defined therein.	z..104 (see 4.4.2)	36
Transaction description	Data describing additional characteristics of the transaction for billing, fee collection or representment purposes. This data element can be used to provide information about merchandise in an authorization or a financial transaction e.g., airline itineraries.	ans..100 (see 4.4.2)	104

Table 9 — Data element directory, concluded

Name	Description	Representation	Bit
Transaction destination institution identification code	Code identifying the institution that is the transaction destination	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	93
Transaction originator institution identification code	Code identifying the institution that is the transaction originator	n..11 (see 4.4.1, 4.4.4 and 4.4.16)	94
Transfer, number	The sum number of all financial transactions processed where positions 1-2 of the processing code in the financial transaction indicated a transfer (40-49).	n 10 (see 4.4.11)	78
Transfer, reversal number	The sum number of all reversal transactions processed where positions 1-2 of the processing code in the reversal transaction indicated a transfer (40-49).	n 10 (see 4.4.11)	79
Transport data	Contains data from the originator of the message that shall be returned unaltered in a response message.	ans..999 (see 4.4.2)	59

¹ Bit position of the data element in which this data element is contained.

4.4 Requirements for data elements

4.4.1 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 numeric positions shall prefix the data element and shall give its length.

The format shall be LLVAR. None of the variable length data element definitions in this International Standard include the two numeric positions of length in the representation column in table 9.

All length attributes shall be right-aligned and zero filled, e.g., primary account number 123456789012 is represented by 12123456789012. The first "12" indicates 12 digits to follow.

4.4.2 Variable length data elements less than 1000

For any variable length data element with a maximum length of less than 1 000 characters, an additional three numeric positions shall prefix the data element and shall give its length.

The format shall be LLLVAR. None of the variable length data element definitions in this International Standard include the three numeric positions of length in the representation column in table 9.

All length attributes shall be right-aligned and zero filled, e.g., 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.

4.4.3 Binary data elements

Binary data shall be grouped into blocks of 8 bits. The length attribute defines the number of such blocks present (e.g., the personal identification number data element has an attribute "b 8", i.e. 64 bits of data). In all "b" data elements, blocks of 8 bits are assumed to be left-aligned with trailing zeroes.

If the format indicates a variable length (LLVAR or LLLVAR) the first two or three numeric positions contain the length in 8 bit blocks of the binary data element which follows. Binary data elements shall have a length which is a multiple of 8 bits.

4.4.4 Identification of institutions

Card issuing institutions and their country codes shall be identified by the procedure specified in ISO 7812, ISO 3166 and annex A of ISO 4909. If the major industry identifier "59" is used, then the associated country code data element shall be used. Institutions that are not card issuers shall be identified by a six digit code as defined in 4.4.16.

In a transaction from acquirer or transaction originator to card issuer or transaction destination the values for these fields shall be as shown in table 10. The acquirer and card issuer remain the same for the life of the transaction. The authorizing agent shall be used in the response message to indicate where an agent stands in for the card issuer.

Where the transaction originator and transaction destination are used, they remain unchanged for the life of the transaction.

Table 10 — Usage of institution identification codes

For request, advice or notification messages:

Institution identification code	Acquirer to A	A to B	B to C	C to Card Issuer
acquirer or transaction originator	remains the same throughout the transaction			
card issuer or transaction destination	remains the same throughout the transaction			
forwarding institution	(acquirer)	A	B	C
receiving institution	A	B	C	(card issuer)

For a response message:

Institution identification code	Issuer to C	C to B	B to A	A to Acquirer
acquirer or transaction originator	remains the same throughout the transaction			
card issuer or transaction destination	remains the same throughout the transaction			
forwarding institution	(card issuer)	C	B	A
receiving institution	C	B	A	(acquirer)

Note: A, B and C represent potential agents that may be present between acquirers and card issuers.

4.4.5 Identification of account numbers

The following data elements shall contain account numbers used to identify a customer account or relationship and shall remain unchanged for the life of a transaction:

- a) Primary account number (PAN) or
- b) Primary account number, (PAN) extended.

The PAN or PAN, extended shall be present in a message but not both.

The following data elements shall be used to identify specific accounts held by the cardholder at the card issuer and if present, they shall remain unchanged for the life of a transaction :

- c) Account identification 1
- d) Account identification 2

4.4.6 Original data elements

These four data elements are in variable length format totalling a maximum of 35 numerics, including the length attribute of the original acquiring institution identification code:

- a) Original message type identifier n 4;
- b) Original system trace audit number n 6;

c) Original date and time, local transaction n 12;

d) Original acquiring institution identification code n..11 (LLVAR).

Absence of data shall be indicated by zeroes.

4.4.7 Action code

The numbering scheme for action codes shall be based upon the type of action and has no direct correlation to the message type identifier. The action codes are grouped as follows:

- 0xx — authorization/financial transaction approved
- 1xx — authorization/financial transaction denied
- 2xx — authorization/financial transaction denied, pick up card
- 3xx — file actions
- 4xx — reversal or chargeback actions
- 5xx — reconciliation actions
- 6xx — administrative actions
- 7xx — fee collection actions
- 8xx — network management actions
- 9xx — error/response actions

The action code values are in clause A.1.

4.4.8 Expression of amounts

The amount shall be 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.

4.4.9 Card acceptor name/location

The card acceptor name/location data element shall consist of six data elements totalling up to 99 characters. The first three data elements are of variable length, separated from the remaining data elements and each other by a back slash (\). The remaining three data elements are fixed format as shown below:

- a) name\street\city\ans..83;
- b) postal code ans 10;
- c) region ans 3;
- d) country code a 3.

The last three positions shall contain the three character country code as defined in ISO 3166.

4.4.10 Original amounts

The amounts, original data element shall consist of two data elements in fixed length format totalling 24 digits:

- a) Original amount, transaction n12;
- b) Original amount, reconciliation n12.

Absence of data shall be indicated by zeroes. These data elements shall be used when attempting to partially reverse or partially chargeback a previous transaction or to perform a partial approval and shall contain the original amounts. They shall also be used when performing replacement or supplementary authorizations. The new transaction amounts shall be in the appropriate data elements. These amounts are for information only and shall not be used in the calculation of reconciliation totals.

4.4.11 Reconciliation

All amounts in the reconciliation messages are in the currency of reconciliation. The "x" portion of the fee data element, defined as x + n 8, 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 11 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 elements in place of the transaction amounts and fees.

The first portion of table 11 identifies how the specific amount data elements from individual authorization, financial, reversal, chargeback and fee collection transactions shall be computed for reconciliation. The second portion identifies how the reconciliation counts shall be accumulated for inquiries, authorizations, payments, transfers, financials, reversals, chargebacks and fee collections.

A repeat (xxx1 or xxx3) message is not added to reconciliation totals unless the original message was not received.

For calculation of amount, net reconciliation:

add the sum of:

credits, fee amounts
credits, amount
credits, reversal amount
credits, chargeback amount

less the sum of:

debits, fee amounts
debits, amount
debits, reversal amount
debits, chargeback amount

equals:

amount, net reconciliation

If the amount, net reconciliation after completing the computation above 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 11 — Reconciliation calculation

Amount Calculations				
MTI		"x" portion of amounts, fees	Add data element:	To data element:
11xx, 12xx, 14xx, 17xx		C	amount, fee of amounts, fees	amount, fee total of credits, fee amounts
11xx, 12xx, 14xx, 17xx		D		amount, fee total of debits, fee amounts
MTI	Original MTI	Processing Code	Add data element:	To data element
12xx	--	00-19	amount, transaction	debits, amount
12xx	--	20-29		credits, amount
14x0	12xx	00-19		credits, reversal amount
14x0	12xx	20-29		debits, reversal amount
14x2	--	00-19		credits, chargeback amount
14x2	--	20-29		debits, chargeback amount

Count Calculations				
MTI		"x" portion of amounts, fees	Add	To data element:
11xx, 12xx, 14xx		C	numeric value of 1	number, fees total of credits, fee amounts
11xx, 12xx, 14xx		D		number, fees total of debits, fee amounts
MTI	Original MTI	Processing Code	Add	To data element:
11xx	--	00-29	numeric value of 1	authorizations, number
11xx	--	30-39		inquiries, number
12xx	--	00-19		debits, number
12xx	--	20-29		credits, number
12xx	--	40-49		transfers, number
12xx	--	50-59		payments, number
14x0	12xx	00-19		credits, reversal number
14x0	12xx	20-29		debits, reversal number
14x2	12xx	00-19		credits, chargeback number
14x2	12xx	20-29		debits, chargeback number
14x0	11xx	00-29		authorizations, reversal number
14xx	--	30-39		inquiries, reversal number
14xx	--	40-49		transfers, reversal number
14xx	--	50-59		payments, reversal number
17xx	--	n/a		fee collections, number

4.4.12 Additional amounts

The amounts, additional data element shall consist of up to six sets of values. Each set of values shall consist of four parts in the following order :

- a) Account type, additional amounts, n2 as defined in positions 3 and 4 or positions 5 and 6 of the processing code data element.
- b) Amount type, additional amounts, n2. Amount type code values are in clause A.2.
- c) Currency code, additional amounts, n3 or a3.
- d) Amount, additional amounts, x + n12.

4.4.13 Use of Cardholder Billing Information

Amount, cardholder billing and amount cardholder billing fee may be used to:

- a) provide cardholder fee information in a financial transaction response (e.g., for printing on a receipt),
- b) provide the amount, transaction expressed in the currency of the cardholder in a response message (e.g., for printing on a receipt),
- c) provide the amount, transaction expressed in the currency of the cardholder in a request, advice or notification message when it is different from both the currency of transaction and currency of reconciliation.

4.4.14 Conversion Rates

The leftmost digit denotes the number of positions the decimal separator shall be moved from the right. Position 2-8 is the rate, e.g., a conversion rate value of 91234567 would equate to 0,001234567.

The maximum number of digits to the right of the decimal separator is 9, provided the first two digits to the right of the decimal separator are zeroes.

4.4.15 Maintenance of codes

Any institution or organization using this International Standard may submit an application to the ISO Secretariat of the Maintenance Agency for an additional code value for each data element referenced by this note.

The need for an additional code value shall be evidenced by a substantiated application, which may be submitted from any source (see clause 7).

4.4.16 Maintenance of institution identification codes

Any institution already holding an identification number assigned through ISO 7812 shall use that identification number as their institution identification

code. An institution involved in financial transaction interchange that does not have an identification number assigned through ISO 7812, shall apply for a number using the procedures described in clause 7.2.

4.4.17 Amounts, fees

The amounts, fees data element shall consist of up to six sets of values. Each set of values shall consist of six data elements in fixed length format totalling 34 characters as follows:

- a) fee type code, n 2
- b) currency code, fee, n 3 or a 3
- c) amount, fee, x + n 8
- d) conversion rate, fee, 8
- e) amount, reconciliation fee, x + n 8
- f) currency code, reconciliation fee, n 3

4.4.18 Amounts, original fees

The amounts, original fees data element shall consist of up to six sets of values. Each set of values shall consist of six data elements in fixed length format totalling 34 characters as follows:

- a) original fee type code, n 2
- b) original currency code, fee, n 3 or a 3
- c) original amount, fee, x + n 8
- d) original conversion rate, fee, n 8
- e) original amount, reconciliation fee, x + n 8
- f) original currency code, reconciliation fee, n 3

These data elements shall be used when attempting to partially reverse or partially chargeback a previous transaction, or to perform a partial approval and shall contain the original fee amounts. The new fee amounts shall be in the appropriate data elements. The original fee amounts are for information only and shall not be used in the calculation of reconciliation totals.

4.4.19 Fee amounts in reconciliation

Fees are accumulated for reconciliation in one of two data elements. The credits, fee amounts and debits, fee amounts data elements shall consist of up to six sets of values. Each set of values shall consist of three data elements in fixed length format totalling 24 characters as follows:

- a) fee type code, n 2
- b) amounts, fee total, n 12
- c) number, fee total, n 10

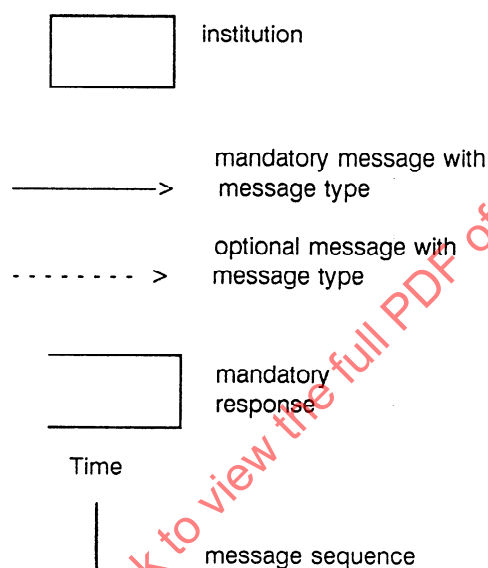
5 Message and transaction flows

5.1 General

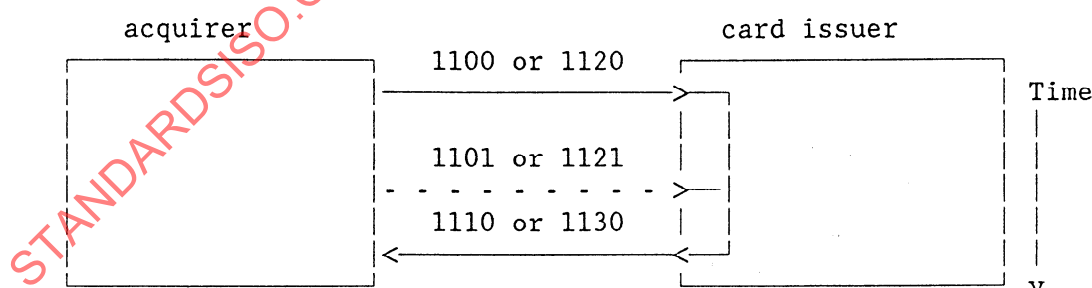
This International Standard specifies a message protocol i.e., the circumstances under which particular messages/transactions shall (or may) be sent, the relationship between one message and another, but not the commercial responsibilities which flow from a particular message/transaction being transmitted. The following shows mandatory and optional message and transaction sequences:

5.2 Message flow diagrams

The following symbols are used in the message flow diagrams:

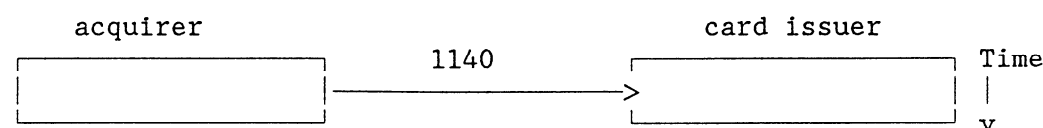


5.2.1 Authorization transactions



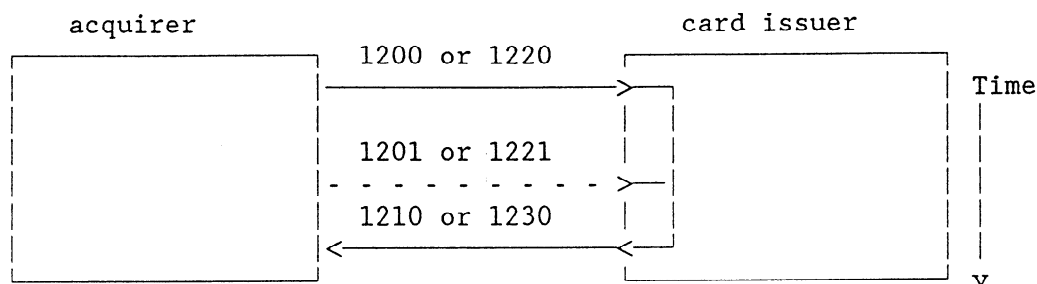
1100/1101 authorization request/authorization request repeat
1110 authorization request response

1120/1121 authorization advice/authorization advice repeat
1130 authorization advice response



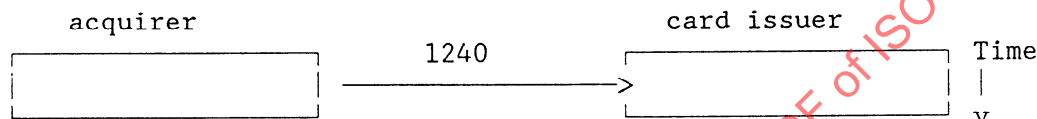
1140 authorization notification

5.2.2 Financial transactions



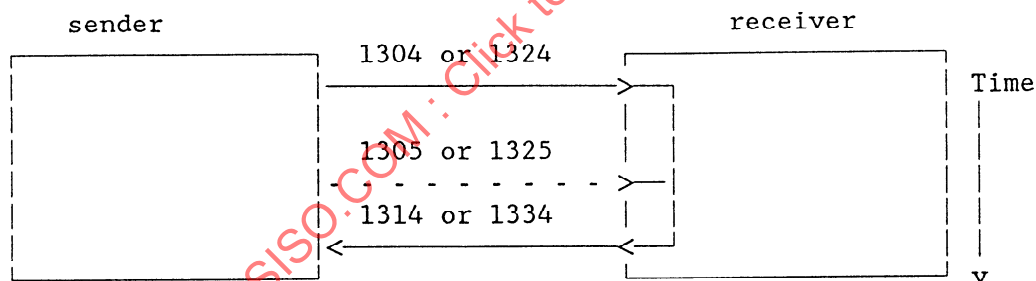
1200/1201 financial request/financial request repeat
1210 financial request response

1220/1221 financial advice/financial advice repeat
1230 financial advice response



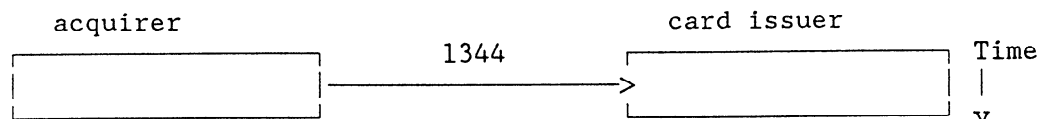
1240 financial notification

5.2.3 File action transactions



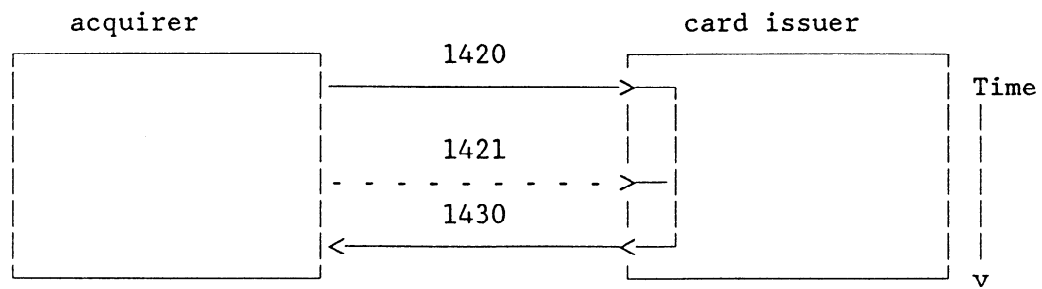
1304/1305 file action request/file action request repeat
1314 file action request response

1324/1325 file action advice/file action advice repeat
1334 file action advice response

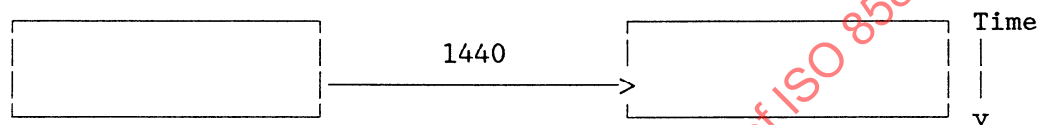


1344 file action notification

5.2.4 Reversal transactions

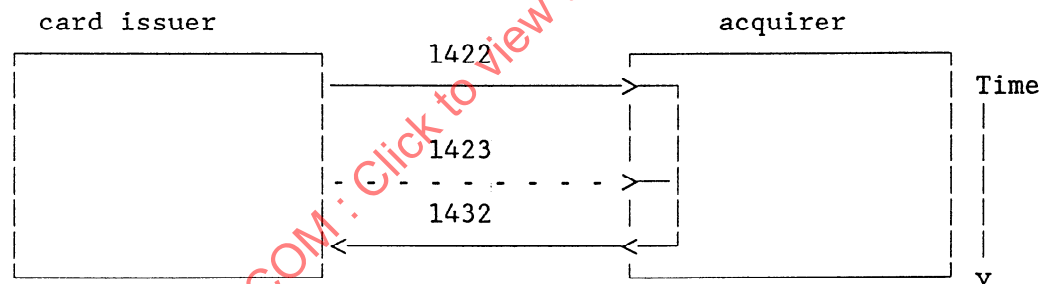


1420/1421 reversal advice/reversal advice repeat
1430 reversal advice response

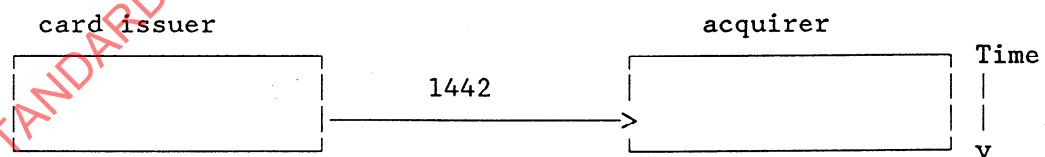


1440 reversal notification

5.2.5 Chargeback transactions

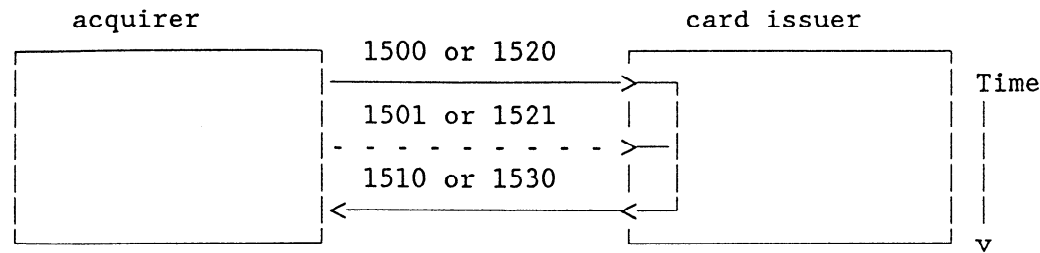


1422/1423 chargeback advice/chargeback advice repeat
1432 chargeback advice response

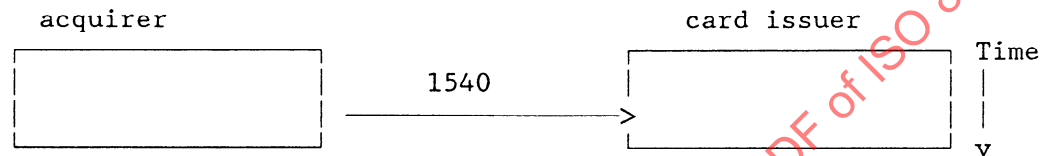


1442 chargeback notification

5.2.6 Acquirer reconciliation transactions

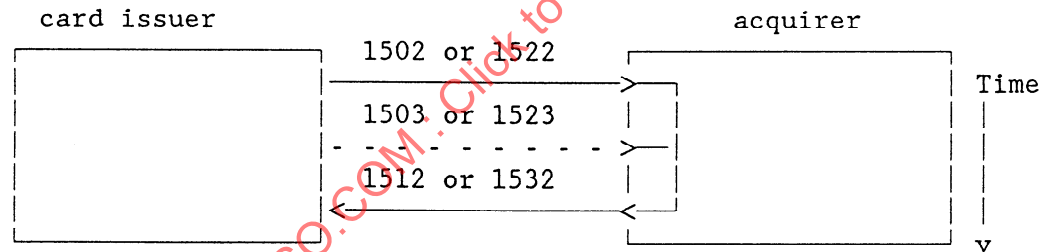


- 1500/1501 acquirer reconciliation request/acquirer reconciliation request repeat
- 1510 acquirer reconciliation request response
- 1520/1521 acquirer reconciliation advice/acquirer reconciliation advice repeat
- 1530 acquirer reconciliation advice response

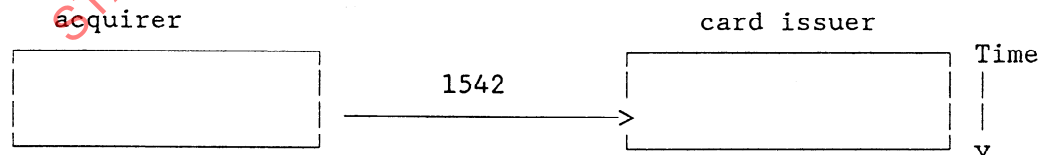


- 1540 acquirer reconciliation notification

5.2.7 Card issuer reconciliation transactions

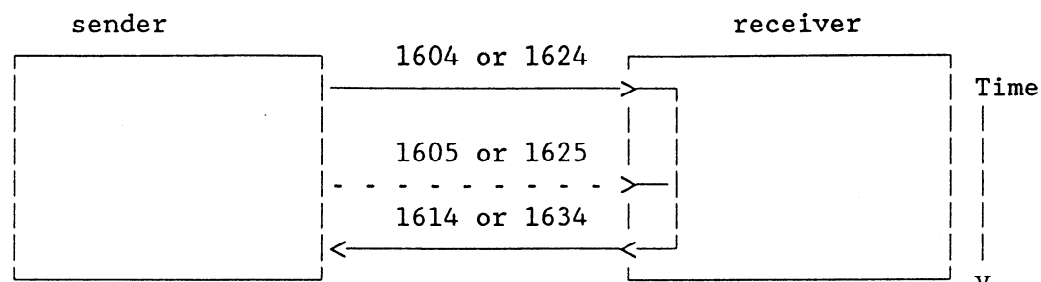


- 1502/1503 card issuer reconciliation request/card issuer reconciliation request repeat
- 1512 card issuer reconciliation request response
- 1522/1523 card issuer reconciliation advice/card issuer reconciliation advice repeat
- 1532 card issuer reconciliation advice response



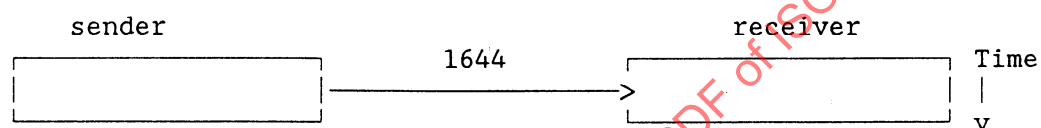
- 1542 card issuer reconciliation notification

5.2.8 Administrative transactions



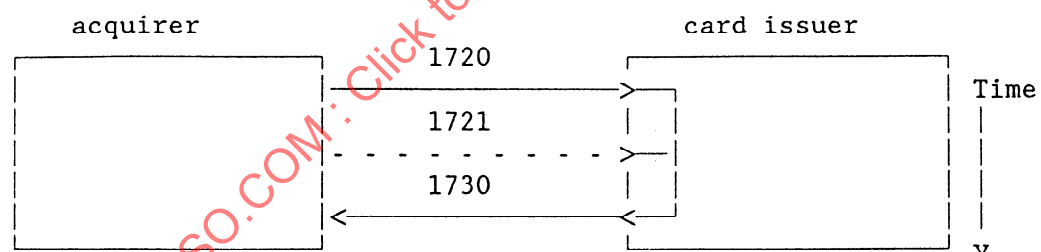
1604/1605 administrative request/administrative request repeat
 1614 administrative request response

1624/1625 administrative advice/administrative advice repeat
 1634 administrative advice response

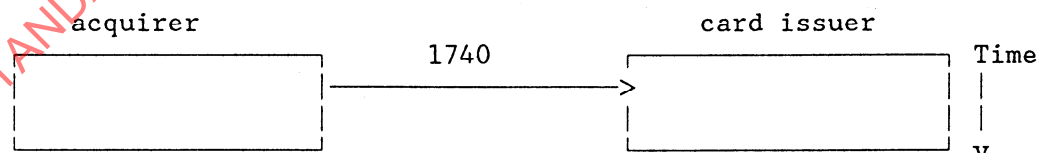


1644 administrative notification

5.2.9 Acquirer fee collection transactions

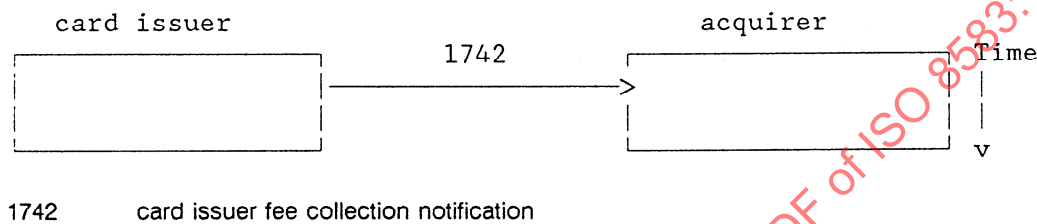
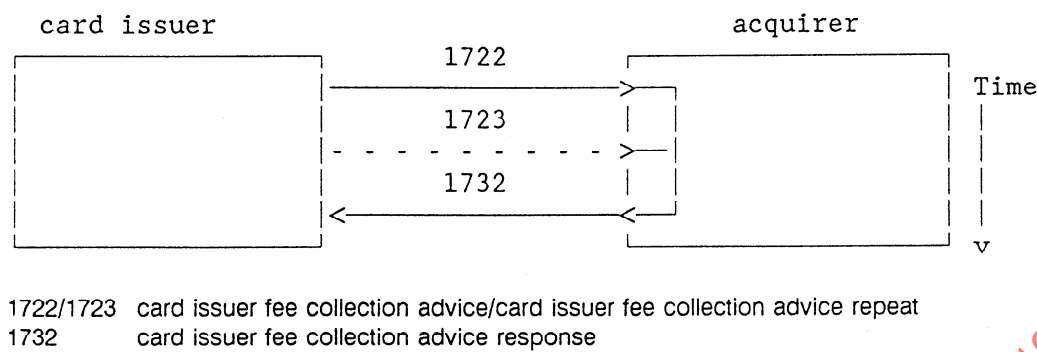


1720/1721 acquirer fee collection advice/acquirer fee collection advice repeat
 1730 acquirer fee collection advice response

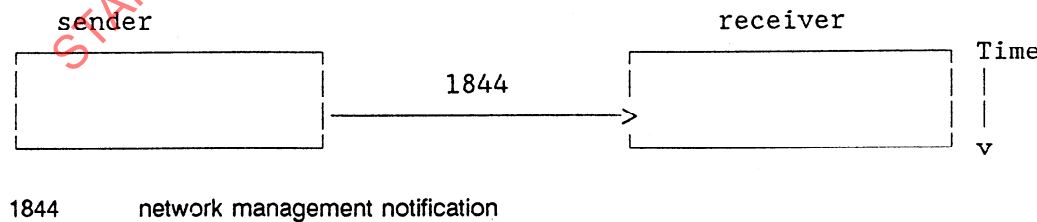
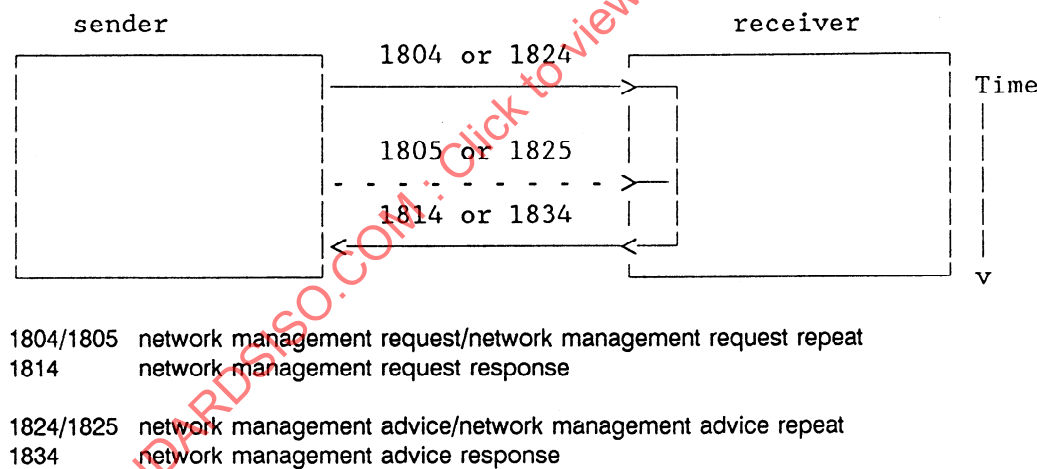


1740 acquirer fee collection notification

5.2.10 Card issuer fee collection transactions

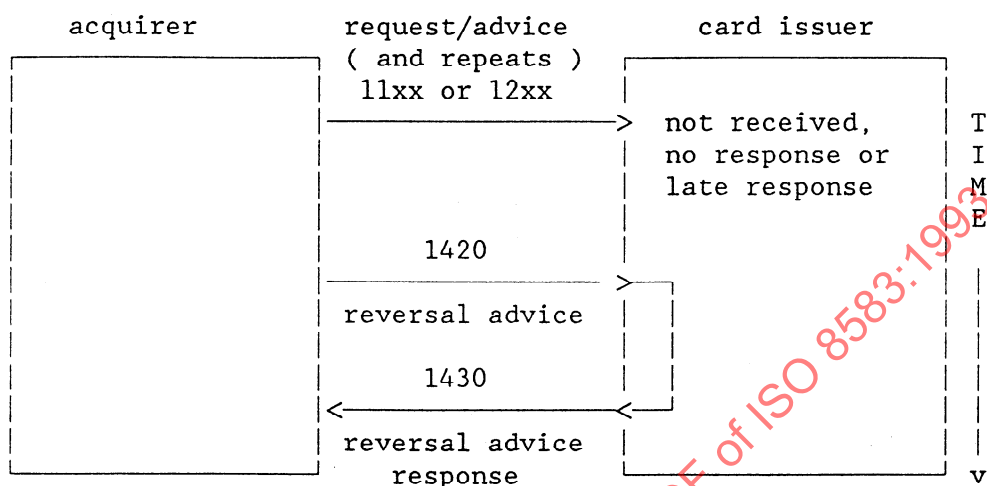


5.2.11 Network management transactions

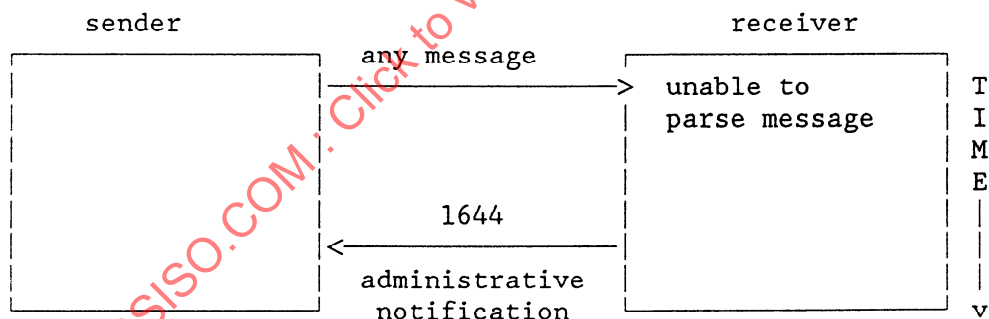


5.2.12 Exception Message Flows

If the original request/advice/repeat sequence is not responded to for whatever reason, the acquirer shall send a reversal. If the acquirer stands-in for the card issuer, the advice follows the reversal. A late response shall be ignored by the acquirer because a reversal (and possibly an advice) has been sent.

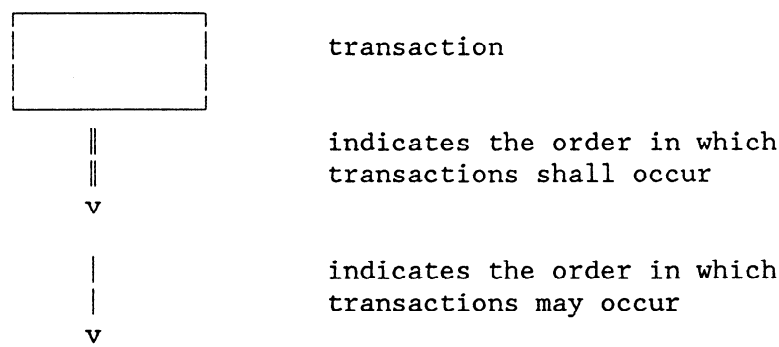


If a message cannot be identified (e.g., the message type identifier cannot be determined) the receiver may send a 1644 administrative notification message with a function code of "650" indicating inability to parse the original message.



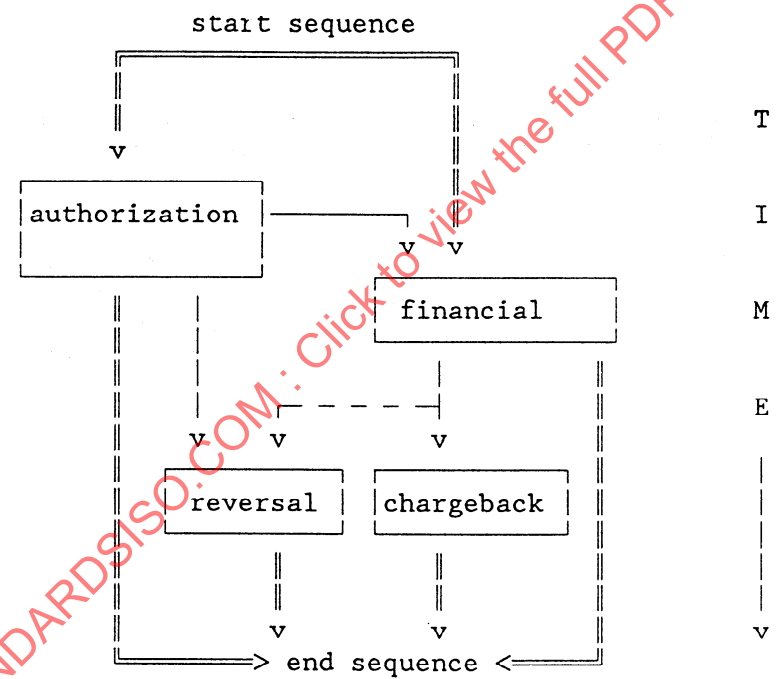
5.3 Transaction flow diagrams

The following symbols are used in the transaction flow diagrams :



5.3.1 Transaction flows for 11xx, 12xx, 14xx transactions

The following shows possible sequences of transactions relating to a single instance of business at a point of service in a full implementation of this standard.



5.3.2 Transaction flows for reconciliation

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

- 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.
- 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.
- 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 2).

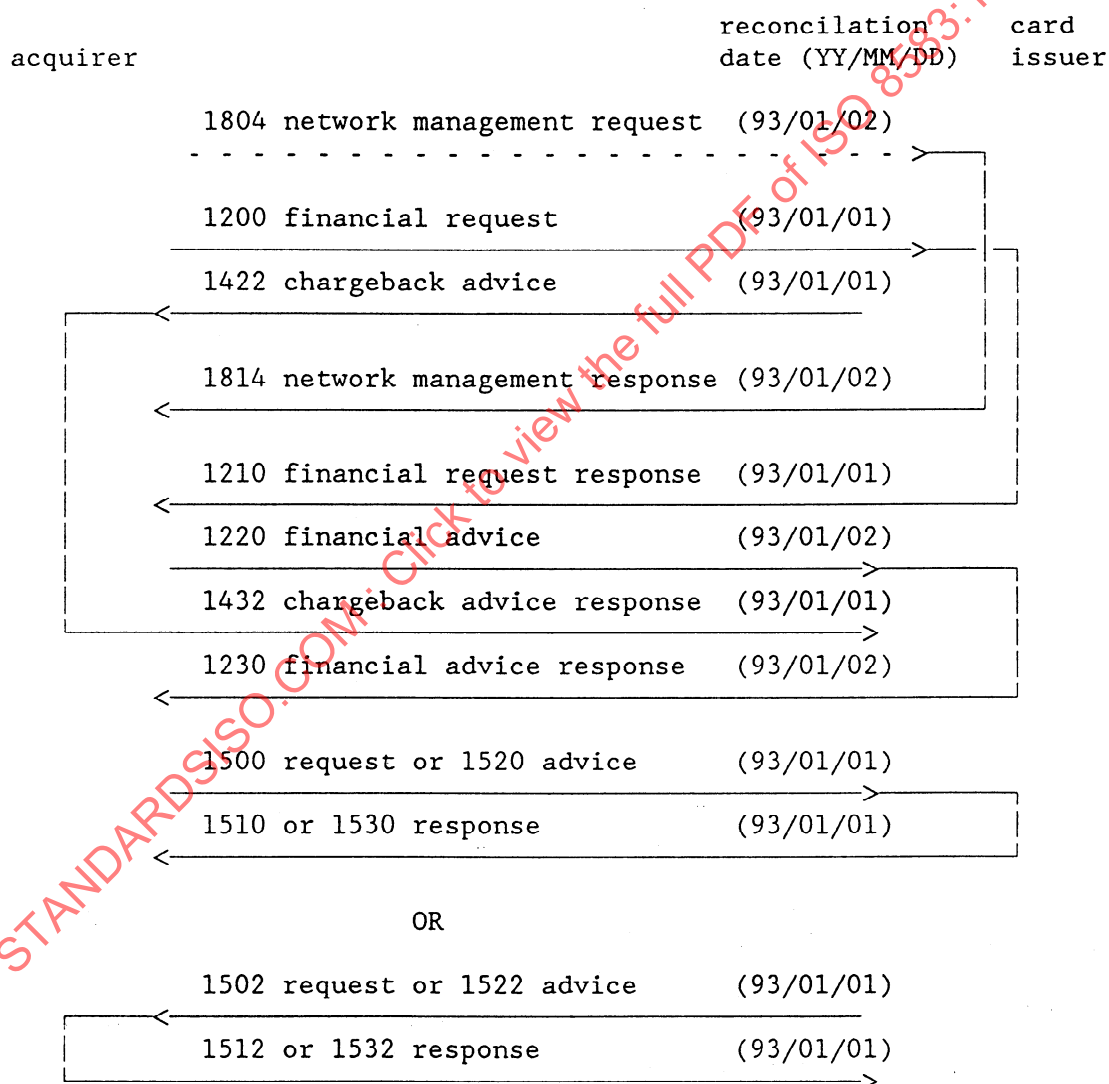


Figure 2 — Reconciliation example

6 Message and transaction matching

6.1 General

Where matching is required it is achieved by reference to a set of fixed unchanged data elements. Two types of matching are defined:

- a) matching within a transaction and
- b) matching between transactions.

6.2 Message matching

In order to match messages within a transaction, the response message shall return the data elements needed for matching. These are identified by condition codes ME, 16 and 27 in table 7B. Any or all of these data elements may be used by the originator of the transaction for matching.

6.3 Transaction matching

In order to achieve transaction matching any or all of the following data elements may be used:

- a) Primary account number (PAN).
- b) Original data elements as contained in the transaction being matched (see 4.4.6).
- c) Retrieval reference number of the original transaction.
- d) Approval code.

Conditions for these data elements are specified in Table 7B.

7 Maintenance Agency and Registration Authority

7.1 Maintenance of codes

A Maintenance Agency established by ISO Council shall act in accordance with the procedures specified in this International Standard. Membership shall consist of representatives of interested bodies appointed by Technical Committee ISO/TC 68.

7.1.1 Maintenance Agency responsibilities

These relate to all codes within this standard and are as follows:

- a) to develop the procedures for processing submitted applications;

b) to define the necessary conditions to be fulfilled for a code value to be allocated;

c) to ensure publication and dissemination of code listings.

7.1.2 Maintenance Agency functions

Functions are divided into two categories :

a) Those relating to ISO 8583 institution identification codes, which are entrusted to the Registration Authority (see 7.2).

b) Those relating to all other ISO 8583 codes, which are entrusted to the Maintenance Agency and its Secretariat (see 7.3).

7.2 ISO 8583 Institution identification codes

7.2.1 Registration Authority

For the purposes of this International Standard and according to the rules for designation and operation of registration authorities in the ISO Directives the ISO Council has appointed the American Bankers Association to act as Registration Authority.

7.2.2 Registration Authority functions

These relate to codes to be used to identify institutions involved in financial transaction interchange within the scope of this standard and that are not eligible for an issuer identification number (IIN) assigned through the procedures specified in ISO 7812. The functions are as follows:

a) to allocate one institution identification code per applicant, as required, for immediate use and to notify the applicant;

b) to prepare regular updating reports on applications and code assignments to the ISO 8583 Registration Management Group;

c) to maintain a register of the numbers assigned as institution identification codes.

7.2.3 Applications for ISO 8583 institution identification codes

An institution shall apply for an institution identification code using the form shown in annex C. The application shall be made to their national standards body, who will forward it to the Registration Authority.

7.3 All other ISO 8583 codes

7.3.1 Maintenance Agency Secretariat

For the purposes of this International Standard and according to ISO Directives, the ISO Council has designated AFNOR Association Française de Normalisation to act as the Secretariat for the Maintenance Agency.

7.3.2 Secretariat functions

Under the authority of the ISO Council, the Secretariat to the Maintenance Agency shall be entrusted with the following functions:

- a) to maintain the list of codes currently assigned within this standard (see annex A);
- b) to consult the Maintenance Agency and then process all submitted applications for new code values, inform the applicants whether their request has been granted and where appropriate make additions and changes to the list of codes;
- c) to establish in the normal course of work, additional rules for the practical application of the principles for assigning codes within this standard.

7.3.3 Applications for new code values

An institution shall apply for new code values using the form shown in annex C. The application shall be made to their national standards body, who will forward it to the Maintenance Agency. The application shall provide the following information:

- a) date of application;
- b) name of the applicant;
- c) name of data element;
- d) definition and proposed use;
- e) if applicable, description of mandatory or conditional use of new value;
- f) if applicable, describe impact on other data elements;
- g) date of implementation (indicate if special conditions of urgency apply);
- h) address for correspondence (name, address, telephone and fax/telex numbers, etc., of applicant).

8 Guidance on the use of this International Standard

8.1 Additional message types

This International Standard is so constructed that new message type identifiers may be added by either

amendment to this International Standard, or by use of the national or private series of message type identifiers within the terms of this International Standard.

8.2 Additional data elements

This International Standard is constructed so that new data elements may be added. An unassigned bit shall be required. Such assignment shall 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 is facilitated by the assignment of that data element to a position in the bit map and the use of that position 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.

8.3 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 shall 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 shall be present if the condition specified in table 8 is satisfied.

8.4 Unintentional introduction of control characters

A bit stream, such as a bit map, PIN or password data elements in the 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.

Annex A

(normative)

Code listings

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A.1 Action codes**Code Description**

000-099 Used in 1110, 1120, 1121, 1140 and 1210, 1220, 1221 and 1240 messages to indicate that the transaction has been approved.

000 approved

001 honour with identification

002 approved for partial amount

003 approved (VIP)

004 approved, update track 3

005 approved, account type specified by card issuer

006 approved for partial amount, account type specified by card issuer

007 approved, update ICC

008-059 reserved for ISO use

060-079 reserved for national use

080-099 reserved for private use

100-199 Used in 1110, 1120, 1121, 1140 and 1210, 1220, 1221 and 1240 messages to indicate that the transaction has been processed for authorization by or on behalf of the card issuer and has been denied (not requiring a card pick-up)

100 do not honour

101 expired card

102 suspected fraud

103 card acceptor contact acquirer

104 restricted card

105 card acceptor call acquirer's security department

106 allowable PIN tries exceeded

107 refer to card issuer

108 refer to card issuer's special conditions

109 invalid merchant

110 invalid amount

111 invalid card number

112 PIN data required

113 unacceptable fee

114 no account of type requested

115 requested function not supported

116 not sufficient funds

117 incorrect PIN

118 no card record

119 transaction not permitted to cardholder

120 transaction not permitted to terminal

121 exceeds withdrawal amount limit

122 security violation

123 exceeds withdrawal frequency limit

124 violation of law

125 card not effective

126 invalid PIN block

127 PIN length error

128 PIN key synch error

129 suspected counterfeit card

130-159 reserved for ISO use

160-179 reserved for national use

180-199 reserved for private use

200-299 Used in 1110, 1120, 1121, 1140 and 1210, 1220, 1221 and 1240 messages to indicate that the transaction has been processed for authorization by or on behalf of the card issuer and has been denied requiring the card to be picked up.

200 do not honour

201 expired card

202 suspected fraud

203 card acceptor contact acquirer

204 restricted card

205 card acceptor call acquirer's security department

206 allowable PIN tries exceeded

207 special conditions

208 lost card

209 stolen card

210 suspected counterfeit card

211-259 reserved for ISO use

260-279 reserved for national use

280-299 reserved for private use

300-399 Used in 1314, 1324, 1325 and 1344 messages to indicate the result of the file action.

300 successful

301 not supported by receiver

302 unable to locate record on file

303 duplicate record, old record replaced

304 field edit error

305 file locked out

306 not successful

307 format error

308 duplicate, new record rejected

309 unknown file

310-359 reserved for ISO use

360-379 reserved for national use

380-399 reserved for private use

400-499	Used in 1430, 1432, 1440 and 1442 messages to indicate the result of the reversal or chargeback.	860-879	reserved for national use
400	accepted	880-899	reserved for private use
401-459	reserved for ISO use	900	Advice acknowledged, no financial liability accepted
460-479	reserved for national use	901	Advice acknowledged, financial liability accepted
480-499	reserved for private use	902-949	Used in request response and advice response messages to indicate transaction could not be processed.
500-599	Used in 1510, 1512, 1530 and 1532 messages to indicate the result of a reconciliation.	902	invalid transaction
500	reconciled, in balance	903	re-enter transaction
501	reconciled, out of balance	904	format error
502	amount not reconciled, totals provided	905	acquirer not supported by switch
503	totals not available	906	cutover in process
504	not reconciled, totals provided	907	card issuer or switch inoperative
505-559	reserved for ISO use	908	transaction destination cannot be found for routing
560-579	reserved for national use	909	system malfunction
580-599	reserved for private use	910	card issuer signed off
600-699	Used in 1614, 1624, 1625, and 1644 messages	911	card issuer timed out
600	accepted	912	card issuer unavailable
601	not able to trace back original transaction	913	duplicate transmission
602	invalid reference number	914	not able to trace back to original transaction
603	reference number/PAN incompatible	915	reconciliation cutover or checkpoint error
604	POS photograph is not available	916	MAC incorrect
605	item supplied	917	MAC key sync error
606	request cannot be fulfilled -required/ requested documentation is not available	918	No communication keys available for use
607-659	reserved for ISO use	919	encryption key sync error
660-679	reserved for national use	920	security software/hardware error — try again
680-699	reserved for private use	921	security software/hardware error — no action
700-799	Used in 1720, 1721, 1740, 1722, 1723 and 1742 messages.	922	message number out of sequence
700	accepted	923	request in progress
701-749	reserved for ISO use	924-929	reserved for ISO use
750-769	reserved for national use	930-939	reserved for national use
770-799	reserved for private use	940-949	reserved for private use
800-899	Used in 1814, 1824, 1825 and 1844 messages.	950-999	Used in advice response messages (1x3x) to indicate the reason for rejection of the transfer of financial liability.
800	accepted	950	violation of business arrangement
801-859	reserved for ISO use	951-983	reserved for ISO use
		984-991	reserved for national use
		992-999	reserved for private use

A.2 Amount type codes**Code Description****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	Account available credit
06-10	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
60-79	Reserved for ISO use
80-89	Reserved for national use
90-99	Reserved for private use

A.3 Authorization life cycle codes**Position 1 — time code****Code Description**

0	Reserved for ISO use
1	calendar days
2	hours
3	minutes
4-5	reserved for ISO use
6-7	reserved for national use
8-9	reserved for private use

Position 2-3 — time interval**Code Description**

01-99	A value of 01 through 99 indicating the number of reiterations indicated in position 1.
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A.4 Card acceptor business codes

The following codes are used to classify the type of business being done by the card acceptor for a transaction.

A.4.1 Card acceptor business codes (numerically)**Agricultural service****Code Description**

0742	Veterinary services
0763	Agricultural cooperatives
0780	Landscaping and horticultural services

Contracted services**Code Description**

1520	General contractors-Residential buildings
1711	Heating, plumbing, air conditioning contractors
1731	Electrical contractors
1740	Masonry, stonework, tile setting, plastering, insulation contractors
1750	Carpentry
1761	Roofing, siding, sheet metal work
1771	Concrete work
1799	Special trade contractors, not elsewhere classified

Transportation**Code Description**

4011	Railroads
4111	Local and suburban commuter passenger transportation, including ferries
4119	Ambulance services
4121	Taxicabs, limousines
4131	Bus lines, charters, tour buses

4214	Motor freight carriers, trucking- local and long distance, moving and storage companies, local delivery
4215	Courier services — Air and ground, freight forwarders
4225	Public warehousing — Farm products, refrigerated goods, household goods, storage
4411	Steamships, cruise lines
4457	Boat rentals, boat leases
4468	Marinas, marine service-supplies
4511	Airlines, air carriers
4582	Airports, flying fields, airport terminals
4722	Travel agencies
4761	Telemarketing: travel related services, vitamins
4784	Tolls, bridge fees
4789	Transportation services, not elsewhere classified

Utilities

Code Description

4812	Telecommunication equipment including telephone sales
4814	Telecommunication service including local and long distance calls, credit card calls, calls through use of magnetic stripe reading telephones, fax services.
4821	Telegraph services
4829	Wire transfer, money orders
4899	Cable services
4900	Utilities — electric, gas, water, sanitary

Retail Stores

Code Description

5211	Lumber, building materials stores
5231	Glass, paint, wallpaper stores
5251	Hardware stores
5261	Nurseries, lawn, garden supply stores
5271	Mobile home dealers
5310	Discount stores
5311	Department stores
5331	Variety stores
5399	Miscellaneous general merchandise stores
5411	Grocery stores, supermarkets
5422	Freezer, locker meat provisioners
5441	Candy, nut, confectionery stores

5451	Dairy products stores
5462	Bakeries
5499	Miscellaneous food stores-specialty markets, convenience
5511	Automobile and truck dealers (new and used) sales, service, parts
5521	Automobile and truck dealers (used only) sales
5531	Auto stores, home supply stores
5532	Automotive tire stores
5533	Automotive parts, accessories stores
5541	Service stations
5542	Automated gasoline dispensers
5551	Boat dealers
5561	Recreational and utility trailers, camper dealers
5571	Motorcycle dealers
5592	Motor home dealers
5598	Snowmobile dealers
5599	Miscellaneous automotive dealers, not elsewhere classified
5611	Men's and boy's clothing and accessory stores
5621	Women's ready to wear stores
5631	Women's accessory and specialty stores
5641	Children's and infant's wear stores
5651	Family clothing stores
5655	Sports apparel, riding apparel stores
5661	Shoe stores
5681	Furriers, fur shops
5691	Men's and women's clothing stores
5697	Tailors, seamstresses, mending, alterations
5698	Wig and toupee stores
5699	Miscellaneous apparel and accessory stores
5712	Furniture, home furnishings and equipment stores, except appliances
5713	Floor covering stores
5714	Drapery, window coverings, upholstery
5718	Fireplace, fireplace screens and accessories stores
5719	Miscellaneous home furnishing specialty stores
5722	Household appliance stores
5732	Radio, television and stereo stores
5733	Music stores, musical instruments, pianos, sheet music
5734	Computer software stores
5735	Record stores
5811	Caterers
5812	Eating places, restaurants

5813	Drinking places (alcoholic beverages) — bars, taverns, nightclubs, cocktail lounges, discotheques
5814	Fast food restaurants
5912	Drug stores, pharmacies
5921	Package stores, beer, wine, liquor
5931	Used merchandise stores, second hand stores
5932	Antique shops
5933	Pawn shops
5935	Wrecking and salvage yards
5937	Antique reproduction stores
5940	Bicycle shops- sales and service
5941	Sporting goods stores
5942	Book stores
5943	Stationery, office and school supply stores
5944	Jewelry, watches, clocks and silverware stores
5945	Hobby, toy and game stores
5946	Camera and photographic supply stores
5947	Gift, card, novelty and souvenir stores
5948	Luggage and leather goods stores
5949	Sewing, needlework, fabric and piece goods stores
5950	Glassware and crystal stores
5961	Mail order houses including catalog order stores, book and record clubs
5963	Direct selling establishments, door-to-door sales
5970	Artist supply and craft stores
5971	Art dealers and galleries
5972	Stamp and coin stores-Philatelic and numismatic supplies
5973	Religious goods stores
5974	Rubber stamp stores
5975	Hearing aids-sales, service, supply stores
5976	Orthopedic goods — Artificial limb stores
5977	Cosmetic stores
5978	Typewriter stores — sales, service, rentals
5983	Fuel dealers — Fuel oil, wood, coal, liquified petroleum
5992	Florists
5993	Cigar stores and stands
5994	News dealers and newsstands
5995	Pet shops, pet food and supplies
5996	Swimming pools — sales and supplies
5997	Electric razor stores — sales and service
5998	Tent and awning stores
5999	Miscellaneous and specialty retail stores

Service providers

Code	Description
6010	Financial institutions — Manual cash disbursements
6011	Financial institutions — Automated cash disbursements
6012	Financial institutions — Merchandise and services
6051	Non financial institutions — Foreign currency, money orders (not wire transfer), scrip, travelers' checks, postage stamps
6211	Securities — brokers and dealers
6300	Insurance — sales and underwriting
6381	Insurance premiums
6399	Insurance, not elsewhere classified
6611	Overpayments, reclamation
6760	Savings bonds
7011	Lodging-hotels, motels, resorts
7032	Sporting and recreational camps, boys' and girls' camps
7033	Trailer parks and campgrounds

Personal service providers

Code	Description
7210	Laundry, cleaning and garment services
7211	Laundry services — family and commercial
7216	Dry cleaners
7217	Carpet and upholstery cleaning
7221	Photographic studios
7230	Beauty shops, barber shops
7251	Shoe repair shops, shoe shine parlors, hat cleaning shops
7261	Funeral service and crematories
7273	Dating and escort services
7276	Tax preparation service
7277	Counseling service — marriage, personal
7278	Buying and shopping services, clubs
7279	Debt counseling
7280	Hospital patient personal funds withdrawal accounts
7295	Babysitting services
7296	Clothing rental — costumes, uniforms
7297	Massage parlors
7298	Health and beauty spas
7299	Miscellaneous personal services, not elsewhere classified

Business services**Code Description**

7311	Advertising services
7321	Consumer credit reporting agencies
7322	Debt collection agencies
7332	Blueprinting and photocopying services
7333	Commercial photography, art, graphics
7338	Quick copy and reproduction services
7339	Stenographic services
7341	Window cleaning services
7342	Exterminating and disinfecting services
7349	Cleaning and maintenance, janitorial services
7361	Employment agencies, temporary help services
7372	Computer and data processing services
7389	Telemarketing other than travel related services
7392	Management, consulting, public relations services
7393	Detective agencies, protective agencies, security services, including armored cars, guard dogs
7394	Equipment rental and leasing services, tool rental, Furniture rental, appliance rental
7395	Photorefinishing laboratories, photo developing
7399	Business services — not elsewhere classified
7512	Automobile rental and leasing
7513	Truck and utility trailer rental
7519	Motor home and recreational vehicle rental
7523	Automobile parking lots and garages

Repair services**Code Description**

7531	Automotive body repair shops
7534	Tire retreading and repair shops
7535	Automotive paint shops
7538	Automotive repair shops (non-dealer)
7542	Car washes
7549	Towing services
7622	Radio, television and stereo repair shops
7623	Air conditioning and refrigeration repair shops
7629	Electrical and small appliance repair shops
7631	Watch, clock and jewelry repair shops
7641	Reupholstery and furniture repair, furniture refinishing

7692 Welding

7699 Miscellaneous repair shops and related services

Amusement and entertainment**Code Description**

7832	Motion picture theaters
7833	Motion picture theaters (quick payment services)
7841	Video rental stores
7911	Dance halls, studios, and schools
7922	Theatrical producers (except motion pictures), ticket agencies
7929	Bands, orchestras, entertainers
7932	Billiard and pool establishments
7933	Bowling alleys
7941	Commercial sports, professional sports clubs, athletic fields, sports promoters
7991	Tourist attractions and exhibits
7992	Golf courses — public
7993	Video amusement game supplies
7994	Video game arcades and establishments
7995	Betting (including lottery tickets, casino Gaming chips, off track betting, and wagers at race tracks)
7996	Amusement parks, circuses, carnivals, fortune tellers
7997	Membership clubs (sports, recreation, athletic), country clubs, private golf courses
7998	Aquariums, seaquariums, dolphinariums
7999	Recreation services (including swimming pools, miniature golf and driving ranges, ski slopes, sport and games instruction, boat rentals and aircraft rentals)

Professional services and membership organization**Code Description**

8011	Doctors
8021	Dentists, orthodontists
8031	Osteopathic physicians
8041	Chiropractors
8042	Optometrists, ophthalmologists
8043	Opticians
8044	Optical goods and eyeglasses
8049	Chiropodists, podiatrists
8050	Nursing and personal care facilities
8062	Hospitals
8071	Medical and dental laboratories

8099	Medical services, health practitioners, not elsewhere classified
8111	Legal services, attorneys
8211	Elementary and secondary schools
8220	Colleges, universities, professional schools and Junior colleges
8241	Correspondence schools
8244	Business and secretarial schools
8249	Vocational and trade schools
8299	Schools and educational services, not elsewhere classified
8351	Child care services
8398	Charitable and social service organizations
8641	Civic, social and fraternal associations
8651	Political organizations
8661	Religious organizations
8675	Automobile associations
8699	Membership organizations, not elsewhere classified
8911	Architectural, engineering, and surveying services
8931	Accounting, auditing and bookkeeping services
8999	Professional services, not elsewhere classified

Government services**Code Description**

9211	Court costs, including alimony and child support
9222	Fines
9223	Bail and bond payments
9311	Tax payments
9399	Government services, not elsewhere classified
9401	Food stamps
9411	Government loan payments

A.4.2 Card acceptor business codes (alphabetically)**-A-****Code Description**

8931	Accounting, auditing and bookkeeping services
7311	Advertising services
0763	Agricultural cooperatives
7623	Air conditioning and refrigeration repair shops
4511	Airlines, air carriers

4582	Airports, flying fields, airport terminals
4119	Ambulance services
7999	Amusement and recreation services, (including swimming pools, miniature golf and driving ranges, ski slopes, sport and games instruction, and boat rentals)
7996	Amusement parks, circuses, carnivals, fortune tellers
5937	Antique reproduction stores
5932	Antique shops
7394	Appliance rental
7998	Aquariums, seaquariums, dolphinariums
5971	Art dealers and galleries
5970	Artist supply and craft stores
5531	Auto stores, home supply stores
5542	Automated gasoline dispensers
5511	Automobile and truck dealers-(new and used)-sales, service, parts
5521	Automobile and truck dealers-(used only) sales
8675	Automobile associations
7523	Automobile parking lots and garages
7512	Automobile rental and leasing
7531	Automotive body repair shops
7535	Automotive paint shops
5533	Automotive parts, accessories stores
7538	Automotive repair shops (non-dealer)
5532	Automotive tire stores

-B-**Code Description**

7295	Babysitting services
9223	Bail and bond payments
5462	Bakeries
7929	Bands, orchestras, entertainers
5813	Bars
7230	Beauty shops, barber shops
7995	Betting (including lottery tickets, casino gaming chips, off track betting, and wagers at race tracks)
5940	Bicycle shops- sales and service
7932	Billiard and pool establishments
7332	Blueprinting and photocopying services
5551	Boat dealers
4457	Boat rentals, boat leases
5942	Book stores
7933	Bowling alleys
4131	Bus lines, charters, tour buses
8244	Business and secretarial schools
7399	Business services, not elsewhere classified
7278	Buying and shopping services, clubs

-C-

Code	Description
4899	Cable services
5946	Camera and photographic supply stores
5441	Candy, nut, confectionery stores
7542	Car washes
1750	Carpentry
7217	Carpet and upholstery cleaning
5811	Caterers
8398	Charitable and social service organizations
8351	Child care services
5641	Children's and infants' wear stores
8049	Chiropodists, podiatrists
8041	Chiropractors
5993	Cigar stores and stands
8641	Civic, social and fraternal associations
7349	Cleaning and maintenance, janitorial services
7296	Clothing rental — costumes, uniforms
5813	Cocktail lounges
8220	Colleges, universities, professional schools and junior colleges
7333	Commercial photography, art and graphics
7941	Commercial sports, professional sports clubs, athletic fields, sports promoters
7372	Computer and data processing services
5734	Computer software stores
7321	Consumer credit reporting agencies
1771	Concrete work
8241	Correspondence schools
5977	Cosmetic stores
7279	Counseling service — debt
7277	Counseling service — marriage, personal
4215	Courier services — air, ground, freight forwarders
9211	Court costs, including alimony and child support

-D-

Code	Description
5451	Dairy products stores
7911	Dance halls, studios, and schools
7273	Dating and escort services
7322	Debt collection agencies
8021	Dentists, orthodontists
5311	Department stores
7393	Detective agencies, protective agencies, and security services including armored cars, guard dogs

5963	Direct selling establishments, door-to-door sales
5813	Discotheques
5310	Discount stores
8011	Doctors
5714	Drapery
5813	Drinking places (alcoholic beverages) -bars, taverns, nightclubs, cocktail lounges, discotheques
5912	Drug stores, pharmacies
7216	Dry cleaners

-E-

Code	Description
5812	Eating places, restaurants
5997	Electric razor stores — sales and service
7629	Electrical and small appliance repair shops
1731	Electrical contractors
8211	Elementary and secondary schools
7361	Employment agencies, temporary help services
8911	Engineering, architectural and surveying services
7394	Equipment rental, and leasing services, tool rental, furniture rental and appliance rental
7342	Exterminating and disinfecting services

-F-

Code	Description
5651	Family clothing stores
5814	Fast food restaurants
6011	Financial institutions — automated cash disbursements
6010	Financial institutions — manual cash disbursements
6012	Financial institutions — Merchandise and services
9222	Fines
5718	Fireplace, fireplace screens and accessories stores
5713	Floor covering, rug and carpet stores
5992	Florists
9401	Food stamps
5422	Freezer, locker meat provisioners
5983	Fuel dealers — fuel oil, wood, coal, liquified petroleum
7261	Funeral service and crematories
5712	Furniture, home furnishings and equipment stores, except appliance
7394	Furniture rental
5681	Furriers, fur shops

-G-

Code	Description
1520	General contractors-residential buildings
5947	Gift, card, novelty and souvenir stores
5231	Glass, paint, wallpaper stores
5950	Glassware and crystal stores
7992	Golf courses — public
9411	Government loan payments
9399	Government services, not elsewhere classified
5411	Grocery stores, supermarkets

-H-

Code	Description
5251	Hardware stores
7298	Health and beauty spas
5975	Hearing aid sales, service, supply stores
1711	Heating, plumbing, air conditioning contractors
5945	Hobby, toy and game stores
8062	Hospitals
7280	Hospital patient personal funds withdrawal account
5722	Household appliance stores

-I-

Code	Description
6399	Insurance, not elsewhere classified
6300	Insurance — sales and underwriting
6381	Insurance premiums

-J-

Code	Description
7349	Janitorial services
5944	Jewelry, watches, clocks and silverware stores

-L-

Code	Description
0780	Landscaping and horticultural services
7211	Laundry services — family and commercial
7210	Laundry, cleaning and garment services
8111	Legal services, attorneys

4111	Local and suburban commuter passenger transportation, including ferries
7011	Lodging — hotels, motels, resorts
5948	Luggage and leather goods stores
5211	Lumber, building materials stores

-M-

Code	Description
5961	Mail order houses including catalog order stores, book and record clubs
7392	Management, consulting, public relations services
4468	Marinas, marine service-supplies
1740	Masonry, stonework, tile setting, plastering, insulation contractors
7297	Massage parlors
8071	Medical and dental laboratories
8099	Medical services, health practitioners, not elsewhere classified
7997	Membership clubs (sports, recreation, athletic), country clubs, private golf courses
8699	Membership organizations; not elsewhere classified
5611	Men's and boys' clothing and accessory stores
5691	Men's and women's clothing stores
5999	Miscellaneous and specialty retail stores
5699	Miscellaneous apparel and accessory stores
5599	Miscellaneous automotive dealers, not elsewhere classified
5499	Miscellaneous food stores-specialty, markets, convenience
5399	Miscellaneous general merchandise stores
5719	Miscellaneous home furnishing specialty stores
7299	Miscellaneous personal services, not elsewhere classified
7699	Miscellaneous repair shops and related services
5271	Mobile home dealers
7832	Motion picture theaters
7833	Motion picture theaters (quick payment service)
4214	Motor freight carriers, trucking- local and long distance, moving and storage companies, local delivery
7519	Motor home and recreational vehicle rental
5592	Motor home dealers
5571	Motorcycle dealers
5733	Music stores, musical instruments, pianos, sheet music

-N-

Code	Description
5994	News dealers and newsstands
5813	Nightclubs
6051	Non financial institutions — foreign currency, money orders (not wire transfer), scrip travelers checks, postage stamps, and quasi cash
5261	Nurseries, lawn, garden supply stores
8050	Nursing and personal care facilities

-O-

Code	Description
8044	Optical goods and eyeglasses
8043	Opticians
8042	Optometrists, ophthalmologists
5976	Orthopedic goods — artificial limb stores
8031	Osteopathic physicians
6611	Overpayments

-P-

Code	Description
5921	Package stores, — beer, liquor, wine
5933	Pawn shops
8050	Personal care services
5995	Pet shops, pet food and supplies
7395	Photorefinishing laboratories, photo developing
7221	Photographic studios
8651	Political organizations
8999	Professional services, not elsewhere classified
4225	Public warehousing — farm products, refrigerated goods, household goods, storage

-Q-

Code	Description
7338	Quick copy and reproduction services

-R-

Code	Description
7622	Radio, television and stereo repair shops
5732	Radio, television and stereo stores
4011	Railroads
5735	Record stores
5561	Recreational and utility trailers, camper dealers
5973	Religious goods stores
8661	Religious organizations
5812	Restaurants
7641	Reupholstery and furniture repair, furniture refinishing
1761	Roofing and siding, sheet metal work
5974	Rubber stamp stores

Code	Description
6760	Savings bonds
8299	Schools and educational services, not elsewhere classified
6211	Securities — brokers and dealers
5541	Service stations
5949	Sewing, needlework, fabric and piece goods stores
7251	Shoe repair shops, shoe shine parlors, hat cleaning shops
5661	Shoe stores
5598	Snowmobile dealers
1799	Special trade contractors, not elsewhere classified
7032	Sporting and recreational camps, boys' and girls' camps
5941	Sporting goods stores
5655	Sports apparel, riding apparel stores
5972	Stamp and coin stores — philatelic and numismatic supplies
5943	Stationery, office and school supply stores
4411	Steamships, cruise Lines
7339	Stenographic services
5996	Swimming pools — sales and supplies

-T-

Code	Description
5697	Tailors, seamstresses, mending, alterations
5813	Taverns
9311	Tax payments
7276	Tax preparation service
4121	Taxicabs limousines
4821	Telegraph services
4761	Telemarketing: travel related services, vitamins
4814	Telecommunication service including local and long distance calls, credit card calls, calls through use of magnetic stripe reading telephones, fax service
4812	Telecommunication equipment including telephone sales
7361	Temporary help services
5998	Tent and awning stores
7922	Theatrical producers (except motion pictures), ticket agencies
7534	Tire retreading and repair shops
4784	Tolls, bridge fees
7394	Tool rental
7549	Towing services
7991	Tourist attractions and exhibits
7033	Trailer parks and campgrounds
4011	Trains
4789	Transportation services, not elsewhere classified
4722	Travel agencies
9700	Travellers cheques, foreign currency, money, scrip, precious metals
7513	Truck and utility trailer rental
5978	Typewriter stores — sales, service, rentals

-U-

Code	Description
5931	Used merchandise stores, second hand stores
4900	Utilities — electric, gas, water, sanitary

-V-

Code	Description
5331	Variety stores
0742	Veterinary services
7993	Video amusement game supplies

7994	Video game arcades and establishments
7841	Video rental stores
8249	Vocational and trade schools

-W-

Code	Description
7631	Watch, clock and jewelry repair shops
7692	Welding
5698	Wig and toupee stores
7341	Window cleaning services
5714	Window covering upholstery services
4829	Wire transfer, money orders
5631	Women's accessory and specialty stores
5621	Women's ready to wear stores
5935	Wrecking and salvage yards

A.5 Fee type codes

Code	Description
00	transaction fee
01	transaction processing fee
02	fee collection fee
03	file action fees
04	telex, telephone and cable charges
05	auto-telex charges
06	lost/stolen card report fees
07	merchant service fees
08	recovered card awards
09	invalid chargeback handling fee
10	recovery of copy/original fees
11	returned guaranteed cheque
12	emergency cash disbursement handling fee
13	arbitration cash disbursement handling fee
14	incorrect merchant identification / transaction data handling fee
15	currency conversion fee
16	special handling fee
17	investigation fees
18	emergency card replacement fee
19	warning bulletin handling fee
20	good faith acceptance
21	collection letters
22-39	reserved for ISO use
40-69	reserved for national use
70-99	reserved for private use

A.6 Function codes

Code Description

000-099 reserved for ISO use

100-199 Used in 1100, 1101, 1120, 1121 and 1140 messages

100 original authorization — amount accurate

101 original authorization — amount estimated

102 replacement authorization — amount accurate

103 replacement authorization — amount estimated

104 resubmission — amount accurate

105 resubmission — amount estimated

106 supplementary authorization — amount accurate

107 supplementary authorization — amount estimated

108 inquiry

109-159 reserved for ISO use

160-179 reserved for national use

180-199 reserved for private use

200-299 Used in 1200, 1201, 1220, 1221 and 1240 messages

200 original financial request/advice

201 previously approved authorization — amount same

202 previously approved authorization — amount differs

203 resubmission of a previously denied financial request

204 resubmission of a previously reversed financial transaction

205 first representment

206 second representment

207 third or subsequent representment

208-259 reserved for ISO use

260-279 reserved for national use

280-299 reserved for private use

300-399 Used in 1304, 1305, 1324, 1325 and 1344 messages

300 unassigned

301 add record

302 change record (see note 1)

303 delete record

304 replace record

305 inquiry

306 replace file

307 add file

308 delete file

309 card administration

310-359 reserved for ISO use

360-379 reserved for national use

380-399 reserved for private use

400-449 Used in 1420, 1421 and 1440 messages to indicate the function of the reversal

400 full reversal, transaction did not complete as approved

401 partial reversal, transaction did not complete for full amount

402-419 reserved for ISO use

420-439 reserved for national use

440-449 reserved for private use

450-499 Used in 1422, 1423 and 1442 messages to indicate the function of the chargeback

450 first chargeback, full

451 second chargeback, full

452 third or subsequent chargeback, full

453 first chargeback, partial

454 second chargeback, partial

455 third or subsequent chargeback, partial

456-469 reserved for ISO use

470-489 reserved for national use

490-499 reserved for private use

500-599 Used in 1500, 1501, 1502, 1503, 1520, 1521, 1522, 1523, 1540 and 1542 messages

500 final reconciliation

501 checkpoint reconciliation

502 final reconciliation in a specified currency

503 checkpoint reconciliation in a specified currency

504 request for reconciliation totals

505-539 reserved for ISO use

540-569 reserved for national use

570-599 reserved for private use

600-649 Used in 1604, 1605, 1624, 1625 and 1644 messages for retrievals

600 original receipt, retrieval request
 601 original receipt, repeat retrieval request
 602 original receipt, fulfillment
 603 copy, retrieval request
 604 copy, repeat retrieval request
 605 copy, fulfillment
 606 vehicle rental agreement
 607 hotel charge detail
 608 POS photograph
 609 proof of delivery
 610 imprint
 611-629 reserved for ISO use
 630-639 reserved for national use
 640-649 reserved for private use

650-699 Used in 1604, 1605, 1624, 1625 and 1644 messages for administrative messages

650 unable to parse message
 651-669 reserved for ISO use
 670-689 reserved for national use
 689-699 reserved for private use

700-799 Used in 1720, 1721, 1740, 1722, 1723 and 1742 messages

700 fee collection message
 701 fee collection cancellation, full/partial
 702-759 reserved for ISO use
 760-779 reserved for national use
 780-799 reserved for private use

800-899 Used in 1804, 1805, 1824, 1825 and 1844 messages

800 reserved for ISO use
 801 system condition/sign-on
 802 system condition/sign-off
 803 system condition/target system unavailable
 804 system condition/message originator's system in backup
 805 system condition/special instruction
 806 system condition/initiate alternate routing
 807-810 reserved for ISO use
 811 system security/key change
 812 system security/security alert
 813 system security/password change
 814 system security/device authentication

815-820 reserved for ISO use

821 system accounting/cutover
 822 system accounting/checkpoint
 823-830 reserved for ISO use
 831 system audit control/echo test
 832-859 reserved for ISO use
 860-879 reserved for national use
 880-899 reserved for private use
 900-939 reserved for ISO use
 940-969 reserved for national use
 970-999 reserved for private use

NOTE 1 To be used when fields within a record are being replaced; if the entire record is being changed code 304 is recommended.

A.7 Message reason codes

Code Description

0000-0999 reserved for ISO

1000-1499 Reason for an advice/notification message rather than a request message

1000 stand-in processing at the card issuer's option
 1001 card issuer signed off
 1002 card issuer timed out on original request
 1003 card issuer unavailable
 1004 terminal processed
 1005 ICC processed
 1006 under floor limit
 1007 stand-in processing at the acquirer's option
 1008-1150 reserved for ISO use
 1151-1375 reserved for national use
 1376-1499 reserved for private use

1500-1999 Reason for a request message rather than an advice/notification message

1500 ICC application, common data file unable to process
 1501 ICC application, application data file unable to process
 1502 ICC random selection
 1503 terminal random selection
 1504 terminal not able to process ICC
 1505 on line forced by ICC (CDF or ADF)
 1506 on line forced by card acceptor
 1507 on line forced by CAD to be updated
 1508 on line forced by terminal

1509	on line forced by card issuer	4006	response received too late
1510	over floor limit	4007	card acceptor device unable to complete transaction
1511	merchant suspicious	4008	deposit out of balance
1512-1650	reserved for ISO use	4009	no check in envelope
1651-1775	reserved for national use	4010	payment out of balance
1776-1999	reserved for private use	4011	deposit out of balance/applied contents
2000-2999	Reason for a representment	4012	payment out of balance/applied contents
2000	general — invalid chargeback	4013	unable to deliver message to point of service
2001	invalid acquirer reference number on chargeback	4014	suspected malfunction/card retained
2002	non-receipt of required documentation to support chargeback	4015	suspected malfunction/card returned
2003	correct transaction date provided	4016	suspected malfunction/track 3 not updated
2004	correct merchant description provided (DBA)	4017	suspected malfunction/no cash dispensed
2005	correct merchant location provided	4018	timed-out at taking money/no cash dispensed
2006	incorrect transaction date provided on chargeback	4019	timed-out at taking card/card retained and no cash dispensed
2007	transaction did not exceed merchant floor limit	4020	invalid response, no action taken
2008	transaction authorized by issuer	4021	timeout waiting for response
2009	no error in addition of sale — amount correct in original transaction	4022-4199	reserved for ISO use
2010	no proof of altered amount (customer stated in chargeback that amount had been altered)	4200-4350	reserved for national use
2011	credit previously issued	4351-4499	reserved for private use
2012	original transaction was valid	4500-4999	Reason for a chargeback
2013-2399	reserved for ISO use	4500	invalid merchant
2400-2699	reserved for national use	4501	invalid transaction
2700-2999	reserved for private use	4502	customer dispute
3000-3999	Reason for a file action	4503	expired card
3000	lost card	4504	transaction not permitted to terminal
3001	stolen card	4505	security violation
3002	undelivered card	4506	system malfunction
3003	counterfeit card	4507	disputed transaction amount
3004-3399	reserved for ISO use	4508	authorized amount exceeded
3400-3699	reserved for national use	4509	authorized time limit exceeded
3700-3999	reserved for private use	4510	credit submitted as a debit
4000-4499	Reason for a reversal	4511	debit submitted as a credit
4000	customer cancellation	4512	duplicate processing of transaction
4001	unspecified, no action taken	4513	credit not received
4002	suspected malfunction	4514	fraudulent transaction
4003	format error, no action taken	4515	cardholder denies transaction was finalized
4004	completed partially	4516	non-fulfillment of request for information
4005	original amount incorrect	4517	non-fulfillment of request, illegible copy
		4518	cardholder does not recognize merchant description

4519	stand-in processing not allowed	5000-5999	Reason for a reconciliation
4520	stand-in processing criteria not fulfilled		
4521	transaction exceeds floor limit	5000-5299	reserved for ISO use
4522	declined authorization	5300-5599	reserved for national use
4523	non-matching account number	5600-5999	reserved for private use
4524	error in addition		
4525	altered amount	6000-6499	Reason for a retrieval request
4526	missing signature	6001	cardholder request or dispute
4527	missing card imprint	6002	cardholder demand
4528	canceled preauthorized transaction	6003	chargeback documentation
4529	delinquent reconciliation	6004	legal or fraud investigation
4530	currency conversion errors	6005	legal request
4531	claim or defense on receipt of goods	6006	fraud analysis
4532	defective merchandise	6007	handwriting/paper analysis
4533	fraudulent transaction prior to embossed valid date	6008	cardholder requests copy bearing signature
4534	imprint of multiple slips	6009	request for T&E document (e.g., car rental)
4535	warning bulletin/exception file		
4536	late presentment	6010	original lost in transit
4537	no show disputed	6011	written cardholder demand for original
4538	advance lodging deposit	6012	legal process (e.g., subpoena) specifies original
4539	cardholder disputes transaction date	6013	copy previously sent illegible
4540	card not yet effective	6014	cardholder does not recognize transaction
4541	illegible data		
4542	transaction not received	6015	cardholder does not agree with transaction amount
4543	duplicate processing by multiple institutions	6016	cardholder needs for personal records
4544	cancelling recurring transaction	6017	legal/fraud analysis — signature verification
4545	currency conversion not allowed		
4546	mail/telephone order transaction unauthorized purchaser	6018	legal/fraud analysis — amount verification
4547	card listed on warning bulletin	6019	legal/fraud analysis — imprint verification
4548	cardholder dispute — transaction under merchant floor limit	6020-6199	reserved for ISO use
4549	incorrect account number	6200-6299	reserved for national use
4550	cardholder disputes card activated telephone transaction	6300-6499	reserved for private use
4551	original transaction currency not provided	6500-6999	Reason for an administrative message
4552	mail/telephone order on expired card	6500-6599	reserved for ISO use
4553	transaction not as described	6600-6799	reserved for national use
4554	non-receipt of merchandise	6800-6999	reserved for private use
4555	services not rendered		
4556	merchandise not as described	7000-7999	Reason for a fee collection message
4557-4649	reserved for ISO use	7000-7299	reserved for ISO use
4650-4749	reserved for national use	7300-7599	reserved for national use
4750-4999	reserved for private use	7600-7999	reserved for private use

8000-8999 Reason for a network management message

8000-8299 reserved for ISO use

8300-8599 reserved for national use

8600-8999 reserved for private use

9000-9299 reserved for ISO use

9300-9599 reserved for national use

9600-9999 reserved for private use

4 biographic

5 electronic authentication inoperative

6 other

7 reserved for ISO use

8 reserved for national use

9 reserved for private use

A-I reserved for ISO use

J-R reserved for national use

S-Z reserved for private use

A.8 Point of service data code

Position 1 — Card data input capability

Indicates the primary means of getting the information on the card into the terminal.

Code Description

0 unknown

1 manual, no terminal

2 magnetic stripe read

3 bar code

4 OCR

5 ICC (see note 1)

6 key entered

7 reserved for ISO use

8 reserved for national use

9 reserved for private use

A-I reserved for ISO use

J-R reserved for national use

S-Z reserved for private use

Position 3 — Card capture capability

Indicates whether or not the terminal has the ability to capture a card.

Code Description

0 none

1 capture

2-4 reserved for ISO use

5-7 reserved for national use

8-9 reserved for private use

A-I reserved for ISO use

J-R reserved for national use

S-Z reserved for private use

Position 4 — Operating environment (see note 2)

Indicates if the terminal is attended by the card acceptor and its location.

Code Description

0 no terminal used

1 on premises of card acceptor, attended

2 on premises of card acceptor, unattended

3 off premises of card acceptor, attended

4 off premises of card acceptor, unattended

5 on premises of cardholder, unattended

6-7 reserved for ISO use

8 reserved for national use

9 reserved for private use

A-I reserved for ISO use

J-R reserved for national use

S-Z reserved for private use

Position 2 — Cardholder authentication capability

Indicates the primary means of verifying the cardholder at this terminal. When no order of priorities can be made, value "6" shall be used.

Code Description

0 no electronic authentication

1 PIN

2 electronic signature analysis

3 biometrics

Position 5 — Cardholder present

Indicates if the cardholder is present at the point of service or not and if not why not.

Code	Description
0	cardholder present
1	cardholder not present, unspecified
2	cardholder not present, mail order
3	cardholder not present, telephone
4	cardholder not present, standing authorization
5-6	reserved for ISO use
7-8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

0	cardholder present
1	cardholder not present, unspecified
2	cardholder not present, mail order
3	cardholder not present, telephone
4	cardholder not present, standing authorization
5-6	reserved for ISO use
7-8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 6 — Card present

Indicates if the card is present at the point of service or not.

Code	Description
0	card not present
1	card present
2-4	reserved for ISO use
5-7	reserved for national use
8-9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

0	card not present
1	card present
2-4	reserved for ISO use
5-7	reserved for national use
8-9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 7 — Card data input mode

Indicates method used to input the information from the card to the terminal.

Code	Description
0	unspecified
1	manual, no terminal
2	magnetic stripe read
3	bar code
4	OCR
5	ICC (see note 1)
6	key entered

0	unspecified
1	manual, no terminal
2	magnetic stripe read
3	bar code
4	OCR
5	ICC (see note 1)
6	key entered

7	reserved for ISO use
8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 8 — Cardholder authentication method

Indicates the method for verifying the cardholder identity.

Code	Description
0	not authenticated
1	PIN
2	electronic signature analysis
3	biometrics
4	biographic
5	manual signature verification
6	other manual verification (e.g., drivers license)
7	reserved for ISO use
8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

0	not authenticated
1	PIN
2	electronic signature analysis
3	biometrics
4	biographic
5	manual signature verification
6	other manual verification (e.g., drivers license)
7	reserved for ISO use
8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 9 — Cardholder authentication entity

Indicates the entity verifying the cardholder identity.

Code	Description
0	not authenticated
1	ICC (see note 1)
2	CAD (see note 1)
3	authorizing agent (identified in authorizing agent institution identification code)
4	by merchant
5	other
6	reserved for ISO use
7	reserved for national use
8-9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

0	not authenticated
1	ICC (see note 1)
2	CAD (see note 1)
3	authorizing agent (identified in authorizing agent institution identification code)
4	by merchant
5	other
6	reserved for ISO use
7	reserved for national use
8-9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 10 — Card data output capability

Indicates the ability of the terminal to update the card.

Code Description

0	unknown
1	none
2	magnetic stripe write
3	ICC (see note 1)
4-5	reserved for ISO use
6-7	reserved for national use
8-9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

9	nine characters
A	ten characters
B	eleven characters
C	twelve characters
D-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

NOTES

1 CAD, ICC, ADF and CDF are terms defined in ISO 10202. For the purposes of this International Standard, CAD shall be synonymous with terminal.

2 If both values 4 and 5 apply, 5 shall be used.

A.9 Processing codes

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

Code Description

00-19	Debits
00	Goods and service
01	Cash
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	Non-cash financial instrument (e.g., wire transfer)
11	quasi-cash and scrip
12-13	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

Position 11 — Terminal output capability

Indicates the ability of the terminal to print/display messages.

Code Description

0	unknown
1	none
2	printing
3	display
4	printing and display
5-6	reserved for ISO use
7-8	reserved for national use
9	reserved for private use
A-I	reserved for ISO use
J-R	reserved for national use
S-Z	reserved for private use

Position 12 — PIN capture capability

Indicates the length of PIN which the terminal is capable of capturing.

Code Description

0	no PIN capture capability
1	device PIN capture capability unknown
2-3	reserved for ISO use
4	four characters
5	five characters
6	six characters
7	seven characters
8	eight characters

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 Payment services

- 50 Payment
- 51-55 Reserved for ISO use
- 56-57 Reserved for national use
- 58-59 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

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.

These two codes are allocated as follows:

Code	Description
00	Default — unspecified
01-02	Default — Reserved for ISO use
03-07	Default — Reserved for national use
08-09	Default — Reserved for private use
10	Savings account — default
11-12	Savings account — Reserved for ISO use
13-17	Savings account — Reserved for national use
18-19	Savings account — Reserved for private use
20	Cheque account — default
21-22	Cheque account — Reserved for ISO use
23-27	Cheque account — Reserved for national use
28-29	Cheque account — Reserved for private use
30	Credit Facility — default
31-32	Credit Facility — Reserved for ISO use
33-37	Credit Facility — Reserved for national use
38-39	Credit Facility — Reserved for private use
40	Universal account — default
41-42	Universal account — Reserved for ISO use
43-47	Universal account — Reserved for national use
48-49	Universal account — Reserved for private use
50	Investment account — default
51-52	Investment account — Reserved for ISO use
53-57	Investment account — Reserved for national use
58-59	Investment account — Reserved for private use
60-69	Reserved for ISO use
70-79	Reserved for ISO use
80-89	Reserved for national use
90-99	Reserved for private use

Annex B

(informative)

Conversion guide

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B.1 Introduction

This International Standard was first published in 1987. It has been implemented by a number of national and international institutions and, is now in widespread use. Among the various financial networks, the standard brought a higher level of commonality and interoperability. Considerable efficiencies were realized by using a common set of message types, message flows, message contents, formats and vocabulary terms.

After some experience with the first edition of this International Standard had been gained, it was recognized that there were some inconsistencies among the various implementations. This was mainly due to the many options that were left to the discretion of each system implementor. This International Standard was intentionally designed to provide sufficient flexibility to accommodate the unique business requirements of individual implementations. This International Standard also included some definitions that were sufficiently imprecise to be subject to varying interpretations. These factors combined to produce some implementations that were incompatible with each other even though they complied with the standard. Although a degree of standardization has been achieved, it was clear that comprehensive inter-network compatibility had not been achieved. The net result was that the experience gained during implementation uncovered some opportunities for additional standardization that could be of further benefit to users.

Towards this end, a Working Group was formed in 1988 to enhance and refine this International Standard. This Working Group used the collective implementation experience gained to produce a new edition. This second edition is an enhancement of the first edition, rather than a completely new standard. It builds upon the first edition to further promote standardization and inter-network compatibility. Messages based on the 1993 edition are distinguished from those which follow the 1987 edition by means of a version number, incorporated as the first position of a restructured Message Type Identifier (MTI).

Like the first edition, this second edition is designed as an interface specification enabling messages to be exchanged between systems adopting a variety of application specifications. Designers of application specifications have complete design freedom within the overall constraint that messages shall be convertible to the interface format in order that international interchange may take place.

B.2 Purpose

This annex provides guidance and assistance to those concerned with compatibility and equivalency between the 1987 and 1993 editions of this International Standard. It outlines the differences between the two editions and provides equivalency charts. The authors of ISO 8583 (1993) recognized that there would be a transitional period during which both editions of the standard would be in use. During this transitional period there should be some direction available to assist users in evaluating and converting to ISO 8583 (1993). This annex fulfills that need and is intended for use mainly by those concerned with converting systems from the first to the second edition. It should also be useful to operators of switches that support both versions simultaneously.

ISO 8583 (1993) is a completely self contained standard. It is not necessary for any user of the standard to refer to this Conversion Guide for explanations or information about the standard. This Conversion Guide will be useful only to those users who need to be aware of the differences between the first and second editions.

NOTE — This annex is for information only and does not constitute part of this International Standard. The annex will not be re-issued. Future changes in the Code Tables associated with ISO 8583 can be obtained from the ISO 8583 Maintenance Agency or from national standards bodies (see clause 7). To utilize the Conversion Guide, reference to both editions of ISO 8583 will be required.

B.3 Differences between 1987 and 1993 editions of ISO 8583

B.3.1 General

The scope and field of application remains largely unchanged between the two editions. This International Standard is intended to provide a common interface by which financial transaction card originated messages may be interchanged between systems. Both the 1987 and 1993 editions specify message structure, format and content, data elements and values for data elements. Neither edition addresses:

- communication protocols;
- data representation;
- batch communications;
- the method of settlement between interchange parties.

There are notable improvements contained in ISO 8583 (1993). These include:

- simplification of message type identifiers;
- more detailed description of message classes;
- restructuring of reversal processing, with clear distinction made between reversals and chargebacks;
- inclusion of integrated circuit card data elements (as defined by ISO/TC 68/SC 6/WG 7);
- inclusion of security data elements (as defined by ISO/TC 68/SC 6/WG 6);
- extension of message series to cover fee collections;
- provision of a mechanism for updating and maintaining the code tables given in this International Standard;
- provision of a mechanism for registering institution identification codes;
- restructuring of reconciliation processing;
- specific advice on exception processing;
- guidance on transaction and message matching;
- consistency in the use of amount data elements;
- support for payment transactions.

The following additional standards are now referenced; ISO 7372, ISO 8601, ISO 9564, ISO 9807 and ISO 10202. References to ISO 7580 have been deleted. The revised standard is drafted and presented in accordance with the latest edition of the ISO/IEC Directives.

B.3.2 Definitions

The following additions, changes and deletions were made to the definitions section:

B.3.2.1 Additions

The following definitions in ISO 8583 (1993) have been added to clarify types of transactions not previously defined, to define composition of message type identifiers and to define other terms not previously addressed:

- bit map (formerly defined in Data Element Directory);
- authorizing agent;
- chargeback;
- codes management group;

- file action;
- financial transaction;
- forwarding institution;
- inquiry;
- institution identifier;
- maintenance agency;
- message class;
- message function;
- notification;
- payment;
- receiving institution;
- reconciliation;
- registration authority;
- replacement authorization;
- representment;
- resubmission;
- supplementary authorization;
- transaction destination institution;
- transaction originator institution;
- version.

B.3.2.2 Changes

The following definitions in ISO 8583 (1987) have been modified to further clarify intentions of messages sent and to augment previous definitions:

- acquirer;
- advice;
- authorization;
- cardholder accounts transfer (renamed 'transfer');
- card issuer;
- point of service;
- request;
- reversal;
- settlement institution;
- transaction.

B.3.2.3 Deletions

The following definitions have been deleted:

- interactive message;
- intermediate network facility;
- non-interactive message;
- processing code;
- reversal credit;
- reversal debit;
- reversal transfer;
- routing;
- transaction fee.

The reasons for the deletions are:

- a) The revised message type identifier (MTI) expanded the identification of the purpose and activity involved, rather than restricting messages to two types — interactive and non-interactive.
- b) Reversal credit, reversal debit and reversal transfer have been deleted because Processing Code describes the financial effects of these transactions.
- c) ISO 8583 (1993) specifies the circumstances in which particular messages/transactions shall (or may) be sent; it does not address commercial (routing) responsibilities.
- d) Processing code is defined in the data element directory.
- e) Intermediate network facility is no longer used anywhere in the standard.

B.3.3 Message Structure

The components of message structure are unchanged from the 1987 to the 1993 edition of the standard.

Each message is constructed in the same sequence, namely message type identifier (MTI), the bit maps and a series of data elements in the order of bit map representation.

B.3.4 Message Types

The four-digit numeric message type identifiers (MTI's) specified in ISO 8583 (1987) have been restructured to give each digit position a specific meaning thus providing an easy method of determining

which MTI should be utilized in any particular situation.

The revised MTI structure is described in 4.1.1 of the standard. The incorporation of a version number, as the first position of the MTI, provides a means of identifying messages exchanged under the respective editions of the standard. Version is defined in 3.39 of ISO 8583 (1993).

In consequence of these revisions, certain MTI's have been eliminated or renamed. All MTI's have been renumbered.

A general overview of improvements is given below.

- a) MTI's have been eliminated or modified when their usage was imprecise or addressed by other message sets.
- b) MTI's which supported three legged transactions have been eliminated.
- c) All completion messages have been eliminated as part of the removal of three legged transactions.
- d) Message functions within each message class have been standardized to facilitate the full range of message processing scenarios, e.g. request — request response, advice — advice response, notification.
- e) Reference to interactive and non-interactive messages has been removed. Request and advice messages have, however, been re-defined as follows:

Request: A message where the sender asks the receiver for an action to be taken.

Advice: A message where the sender notifies the receiver of an activity that has been taken, requiring no approval but requiring a response.

- f) Notification messages have been added. These are messages where the sender notifies the receiver of an activity taken, requiring no approval or response (as distinct from an advice).
- g) A new 17XX message series has been added to accommodate the collection of miscellaneous service fees (e.g. request for copy fees).
- h) Reversal messages have been refined to distinguish between reversals and chargebacks.

The remainder of this annex describes the changes by message class.

Table B.1 — Comparison of message classes

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
authorization request	0100	1100	authorization request
authorization request repeat	0101	1101	authorization request repeat
authorization completion confirmation	0102	—	—
authorization completion confirmation repeat	0103	—	—
authorization request response	0110	1110	authorization request response
authorization completion response	0112	—	—
authorization advice	0120	1120	authorization advice
authorization advice repeat	0121	1121	authorization advice repeat
authorization advice completion confirmation	0122	—	—
authorization advice completion confirmation repeat	0123	—	—
authorization advice response	0130	1130	authorization advice response
authorization advice completion response	0132	—	—
—	—	1140	authorization notification

Notes:

- Elimination of authorization completion messages removes 0102, 0103, 0112, 0122, 0123, 0132
- Addition of authorization notification message 1140.

Table B.1 — Comparison of message classes, continued

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
financial transaction request	0200	1200	financial request
financial transaction request repeat	0201	1201	financial request repeat
financial transaction completion confirmation	0202	—	—
financial transaction completion confirmation repeat	0203	—	—
financial transaction request response	0210	1210	financial request response
financial transaction completion response	0212	—	—
financial transaction advice	0220	1220	financial advice
financial transaction advice repeat	0221	1221	financial advice repeat
financial transaction advice completion confirmation	0222	—	—
financial transaction advice completion confirmation repeat	0223	—	—
financial transaction advice response	0230	1230	financial advice response
financial transaction advice completion response	0232	—	—
—	—	1240	financial notification

Notes:

- Elimination of financial transaction completion messages removes 0202, 0203, 0212, 0222, 0223, 0232.
- Addition of financial notification message 1240.
- Message names changed to remove word "transaction".

Table B.1 — Comparison of message classes, continued

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
acquirer file update request	0300	—	—
card issuer file update request	0302	—	—
—	—	1304	file action request
—	—	1305	file action request repeat
acquirer file update request response	0310	—	—
card issuer file update request response	0312	—	—
—	—	1314	file action request response
acquirer file update advice	0320	—	—
card issuer file update advice	0322	—	—
—	—	1324	file action advice
—	—	1325	file action advice repeat
acquirer file update advice response	0330	—	—
card issuer file update advice response	0322	—	—
—	—	1334	file action advice response
—	—	1344	file action notification

Notes:

- Removed acquirer and card issuer MTI designations as new data elements, transaction originator institution identification code and transaction destination institution identification code, were added to the messages.
- Addition of repeat MTI's if no response received by originator.
- Addition of file action notification 1344.
- Message names changed to replace "update" with "action".

Table B.1 — Comparison of message classes, continued

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
acquirer reversal request	0400	—	—
acquirer reversal request repeat	0401	—	—
card issuer reversal request	0402	—	—
card issuer reversal request repeat	0403	—	—
acquirer reversal request response	0410	—	—
card issuer request response	0412	—	—
acquirer reversal advice	0420	1420	reversal advice
acquirer reversal advice repeat	0421	1421	reversal advice repeat
card issuer reversal advice	0422	1422	chargeback advice
card issuer reversal advice repeat	0423	1423	chargeback advice repeat
acquirer reversal advice response	0430	1430	reversal advice response
card issuer reversal advice response	0432	1432	chargeback advice response
—	—	1440	reversal notification
—	—	1442	chargeback notification

Note:

- Reversals can only be initiated by an acquirer and responded to by a card issuer.
- Chargebacks can only be initiated by a card issuer and responded to by an acquirer.
- Removal of request MTI's as reversals and chargebacks have been redefined as advices only.
- Message names changed to reflect new MTI definitions.
- Addition of reversal notification message 1440 and chargeback notification message 1442.

Table B.1 — Comparison of message classes, continued

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
acquirer reconciliation request	0500	1500	acquirer reconciliation request
acquirer reconciliation request repeat	0501	1501	acquirer reconciliation request repeat
card issuer reconciliation request	0502	1502	card issuer reconciliation request
card issuer reconciliation request repeat	0503	1503	card issuer reconciliation request repeat
acquirer reconciliation request response	0510	1510	acquirer reconciliation request response
card issuer reconciliation request response	0512	1512	card issuer reconciliation request response
acquirer reconciliation advice	0520	1520	acquirer reconciliation advice
acquirer reconciliation advice repeat	0521	1521	acquirer reconciliation advice repeat
card issuer reconciliation advice	0522	1522	card issuer reconciliation advice
card issuer reconciliation advice repeat	0523	1523	card issuer reconciliation advice repeat
acquirer reconciliation advice response	0530	1530	acquirer reconciliation advice response
card issuer reconciliation advice response	0532	1532	card issuer reconciliation advice response
—	—	1540	acquirer reconciliation notification
—	—	1542	card issuer reconciliation notification

Note:

- a) Numbering changed.
- b) Addition of reconciliation notification messages.

Table B.1 — Comparison of message classes, continued

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
administrative request	0600	1604	administrative request
administrative request repeat	0601	1605	administrative request repeat
administrative request response	0610	1614	administrative request response
administrative advice	0620	1624	administrative advice
administrative advice repeat response	0621	1625	administrative advice repeat
administrative advice response	0630	1634	administrative advice response
—	—	1644	administrative notification

Notes:

- a) Addition of administrative notification message 1644.

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
—	—	1720	acquirer fee collection advice
—	—	1721	acquirer fee collection advice repeat
—	—	1730	acquirer fee collection advice response
—	—	1740	acquirer fee collection notification
—	—	1722	card issuer fee collection advice
—	—	1723	card issuer fee collection advice repeat
—	—	1732	card issuer fee collection advice response
—	—	1742	card issuer fee collection notification

Notes:

- a) New message series.
b) Messages are generated by either the acquirer or the card issuer and are restricted to advices and notifications.

Table B.1 — Comparison of message classes, concluded

ISO 8583 (1987)		ISO 8583 (1993)	
Message name	MTI	MTI	Message name
network management request	0800	1804	network management request
network management request repeat	0801	1805	network management request repeat
network management request response	0810	1814	network management request response
network management advice	0820	1824	network management advice
network management advice repeat	0821	1825	network management advice repeat
network management advice response	0830	1834	network management advice response
—	—	1844	network management notification

Note:

- a) Addition of network management notification message 1844.

B.3.5 Data elements

The following additions, changes and deletions were made to the data element directory:

B.3.5.1 Additions

The following data elements (in alphabetical order) have been added to ISO 8583 (1993).

- a) Acquirer reference data (bit 31) — Added to indicate the reference data supplied by an acquirer for its own transaction matching.
 - b) Action code (bit 39) — Added to define the action taken or the action to be taken as well as the reason for taking the action. Incorporates information previously contained in response code and settlement code (now both deleted). A mapping of the new and former data elements is given in B.3.5.4.
 - c) Amounts, fees (bit 46) — Added to denote all fees affecting reconciliation. Indicates the type of fee, the fee amount, currency code, conversion rate and amount reconciliation fee (if the transaction currency is different from the reconciliation currency). Incorporates information previously contained in amount transaction fee, amount transaction processing fee, amount settlement fee, amount settlement processing fee, conversion rate transaction fee, conversion rate transaction processing fee, currency code transaction fee and currency code transaction processing fee. Use of this data element is explained in B.4.4.
 - d) Amounts, original (bit 30) — Added to indicate original amounts, where appropriate in authorization, financial, reversal and chargeback messages. Not used in reconciliation processing. Advice on the usage of amount data elements is given in B.4.1.
 - e) Amounts, original fees (bit 31) — Added to indicate original fee amounts (as distinct from original amounts). Not used in reconciliation processing. Use of this data element is explained in B.4.4.
 - f) Authorizing agent institution identification code (bit 58) — Added to indicate the institution that processed an authorization or financial transaction if different from that identified in either the PAN or PAN extended data elements.
 - g) Authorization life cycle code (bit 57) — Added to indicate how long an authorization request will remain outstanding.
 - h) Authorization, reversal number (bit 90) — Added to support a reconciliation count of authorization transactions.
 - i) Card issuer reference data (bit 95) — Added to indicate the reference data supplied by a card issuer for its own transaction matching.
 - j) Card acceptor business code (bit 26) — Added to provide an international classification of merchant type (bit 18). A list of code values for this data element was added to Annex A.
 - k) Country code, authorizing agent institution (bit 70) ; country code, transaction destination institution (bit 91) ; country code, transaction originator institution (bit 92) — Added in conjunction with new institution identification codes.
 - l) Credits, chargeback amount (bit 105) ; Credits, chargeback number (bit 107) — Added because chargebacks are card issuer to acquirer generated as opposed to reversals, which are acquirer to card issuer generated. Use of these data elements in the reconciliation process is explained in B.4.2.
 - m) Credits, fee amounts (bit 109) — Added to indicate (by fee type) the sum of all fee amounts fees due from the Acquirer. Use of this data element in the reconciliation process is explained in B.4.2.
 - n) Currency code, fee (bit 46) — Added, in conjunction with new amounts, fees data element.
 - o) Data record (bit 72) — Added to support an administrative or file action message.
 - p) Date and time, local transaction (bit 12) — Incorporates information previously contained in date, local transaction and time, local transaction. The date representation now includes "YY".
 - q) Date, effective (bit 13) — Added because of its increasing usage.
 - r) Date, reconciliation (bit 28) — Added to indicate the applicable reconciliation period.
 - s) Debits, chargeback amount (bit 106) ; debits, chargeback number (bit 108) — Added because chargebacks are card issuer to acquirer generated as opposed to reversals, which are acquirer to card issuer generated. Use of these data elements in the reconciliation process is explained in B.4.2.
 - t) Debits, fee amounts (bit 110) — Added to indicate (by fee type) the sum of all fee amounts due to the acquirer. Use of this data element in the reconciliation process is explained in B.4.2.
 - u) Fee collections, number (bit 85) — Added to support a reconciliation count of fee collections.
 - v) Function code (bit 24) — Added to indicate the specific purpose of the message within its message class (e.g. a retrieval request as a type of administrative message).
- Incorporates information previously contained in file update code, network management information code and some response codes (now all deleted). A comparison of the new and former data elements is given in B.3.5.4.

w) Inquiries, reversal number (bit 82) — Added to allow cancellation of any fees associated with the inquiry.

x) Integrated circuit card (ICC) system-related data (bit 55) — Added to meet processing needs relating to use of integrated circuit cards (ICCs).

y) Key management data (bit 96) — Added because former security related data elements are insufficient to convey key management data.

z) Message reason code (bit 25) — Provides the card issuer with the reason an advice or notification message is sent rather than a request message or vice versa.

aa) Payments, number (bit 83) ; payments, reversal number (bit 84) — Added to support a reconciliation count of payment transactions.

ab) Point of service data code (bit 22) — Added to provide more information to support authorization decisions. Incorporates information previously contained in point of service condition code, point of service entry mode and point of service PIN capture code (now all deleted). A mapping of the new and former data elements is given in B.3.5.5.

ac) Reconciliation indicator (bit 29) — Added to support a checkpoint reconciliation within a reconciliation period.

ad) Transaction destination institution identification code (bit 93) ; Transaction originator institution identification code (bit 94) — Added to support general message routing.

ae) Transport data (bit 59) — Added to support remapping and retrieval of transaction originator information.

B.3.5.2 Changes

For ease of updating and reference, the coded values for data elements were moved to annex A.

Attention is drawn to three general changes in the representation of data elements :

a) Binary data is now considered to be grouped into blocks of 8 bits e.g. b8 refers to 64 bits of data. If the format indicates a variable length (LLVAR or LLLVAR) the first two or three positions contain in character form the length in 8-bit blocks of the binary data element which follows. It is not permitted to have a binary data element with a length which is not a multiple of 8 bits.

b) A new representation 'anp' is specified. This allows use of alphabetic, numeric and space (pad) characters.

c) The primary and secondary bit map indicators (P and S) have been removed. Bit map positions are expressed only as a number between 1 and 128. Sub-data elements are so noted.

The following data elements that appeared in ISO 8583 (1987) have been changed in some way. Modifications are varied and include changes to title, description and/or representation.

a) Additional response data (bit 44) — Representation is changed from 'ans..25' to 'ans..99'.

b) Amounts, additional (bit 54) — Formerly additional amounts.

c) Approval code — (bit 38) — Formerly authorization identification response. Representation is changed from 'an' to 'anp'.

d) Approval code length (bit 27) — Formerly authorization identification response length.

e) Authorizations, number (bit 81) — Description modified.

f) Bit map extended (bit 65) — No longer a data element. Position reserved.

g) Card acceptor name/location (bit 43) — Designated a variable length data element. A field separator character (/) was added to delineate sub-fields within this data element.

h) Country code, acquiring institution (bit 19) — Formerly acquirer institution country code.

i) Country code, forwarding institution — (bit 21) — Formerly forwarding institution country code.

j) Country code, primary account number (PAN) (bit 20) — Formerly primary account number (PAN) extended, country code.

k) Credits, amount — (bit 86) — Description expanded.

l) Date, expiration — (bit 14) — Description modified.

m) Date and time, transmission (bit 7) — Formerly transmission date and time. Greenwich Mean Time (GMT) is replaced by Coordinated Universal Time (UTC).

n) Date, reconciliation — (bit 28) — Representation is changed from "n 4" to "n 6" and "YY" is added.

o) Date, settlement — (bit 15) — Description excludes reference to intermediate network facility, which has been deleted from the standard. Representation is changed from "n 4" to "n 6" and "YY" is added.

p) Debits, amount (bit 88) ; debits, number (bit 76) ; debits, reversal amount (bit 89) ; debits, reversal number (bit 89) — Descriptions expanded in overall attempt to better describe reconciliation data elements.

q) Forwarding institution identification code (bit 33) — Description simplified. 4.4.4 of ISO 8583 (1993) describes the relationship and intended use of all institution identification codes.

r) Inquiries, number (bit 80) — Description modified to include reference to processing codes (30-39) as opposed to processing code 30 only. Inquiries are considered to be authorization transactions.

s) Message authentication code (bit 64 or bit 128) — Reference is made in the description to ISO 9807 which provides details of the MAC technique to be used in retail banking.

The representation for binary data is expressed as a block of 8 bits.

t) Original data elements (bit 56) — Description modified. Bit position re-assigned.

Representation reduced from 42 fixed length numeric digits to 35 variable numeric digits. The data element is variable because of changes to the acquiring institution identification code. Description of contents modified.

Original transmission date and time and original forwarding institution identification code are no longer required for transaction matching. Original date and time, local transaction is, however, intended for transaction matching.

u) Personal identification number (PIN) data (bit 52) — Reference is made in the definition to ISO 9564 which provides details of the PIN block formats to be used in retail banking. The representation for binary data is expressed as a block of 8 bits.

v) Primary account number (PAN) (bit 2) — Description simplified.

w) Primary account number (PAN) extended (bit 34) — Description modified to include reference to ISO 4909.

x) Processing code (bit 3) — An additional code is specified in positions 1 and 2, namely 10 (non-cash financial instrument e.g. wire transfer). Positions 3, 4 and 5 re-structured. Code range (50-59) assigned for payment services e.g. a utility bill payment where the card issuer debits the cardholder account and credits the utility company.

y) Receiving institution identification code (bit 100) — Description simplified. Subclause 4.4.4 of ISO 8583 (1993) describes the relationship and intended use of all institution identification codes.

z) Retrieval reference number (bit 37) — Representation is changed from 'an' to 'anp'.

aa) Security related control information (bit 53) — Description modified. Representation is changed from 'n16' to 'b..48'.

ab) Settlement institution identification code (bit 99) — Representation is changed from 'n..11' to 'an..11'.

ac) Service code (bit 40) — Formerly service restriction code. Representation is changed from "an" to "n". Refers to value specified in amendment to ISO 7813.

ad) Transaction description (bit 104) — Description modified to describe additional characteristics of a transaction, not only for billing, but also for fee collection and representation purposes. This data element can be used to provide information about merchandise in an authorization or a financial transaction e.g. airline itineraries.

ae) Transfer, number (bit 78) ; transfer, reversal number (bit 79) — Description modified. Transfers are considered to be financial transactions.

B.3.5.3 Deletions

The following data elements, that appeared in ISO 8583 (1987), have been deleted.

a) Amount, transaction fee ; amount, transaction processing fee ; amount, settlement fee ; amount, settlement processing fee ; conversion rate, transaction fee — Incorporated within consolidated amounts, fees (bit 46).

b) Credits, transaction fee amount ; credits, transaction processing fee amount — Incorporated within consolidated credits, fee amounts (bit 109).

c) Date, local transaction — Incorporated within consolidated date and time, local transaction (bit 12).

d) Debits, transaction fee amount ; debits, transaction processing fee amount — Incorporated within consolidated debits, fee amounts (bit 110).

e) File security code — No evidence of international need/usage identified.

f) File update code — Incorporated within new function code (bit 24) (see B.3.5.4).

g) Intermediate network facility — No longer referenced in the standard.

h) Message security code ; message number last ; network international identifier — No evidence of international need/usage identified.

i) Network management information code — Incorporated within new function code (bit 24) (see B.3.5.4).

j) Point of service condition code ; point of service entry mode ; point of service PIN capture code — Incorporated within new point of service data code (bit 22) (see B.3.5.5).

k) Replacement amounts — Included in amount, transaction (bit 4), the use of which has been modified. Advice on the usage of amount data elements is given in B.4.1.

l) Response code — Incorporated within new function code (bit 24) and action code (bit 39) (see B.3.5.4).

m) Response indicator — Incorporated within an action code (bit 39).

n) Service indicator — No evidence of international need/usage identified.

o) Settlement code — Incorporated within new action code (bit 39) (see B.3.5.4).

p) Time, local transaction — Incorporated within consolidated date and time, local transaction (bit 12).

B.3.5.4 Action, function and message reason code mapping

The following Tables show the mapping of:

a) The former file update code, which is replaced by the newly defined function code, values 300-399;

b) The former network management information code, which is replaced by the newly defined function code, values 800-899;

c) The former response code, which is replaced by the newly defined message reason codes and/or action codes;

d) The former settlement code, which is replaced by the newly defined action code, values 500-599.

Where codes have been deleted, there may be no direct mapping of new function and action codes, which are more precise. In these cases the new code closest in meaning has been indicated.

A complete listing of function and action codes is given in annex A of ISO 8583 (1993).

**Table B.2 — File update code (1987)
mapped to function code (1993)**

Code (1987)	Description	Code (1993)
0	unassigned	300
1	add record	301
2	change record	302
3	delete record	303
4	bulk replacement	304
5	inquiry	305
6	delete record, system purge	303
7	add file	307
8	delete file	308
9	unassigned	300
A-F	reserved for ISO use	309-359
G-N	reserved for national use	360-379
O-Z	reserved for private use	380-399

Table B.3 — Network management information code (1987) mapped to function code (1993)

Code (1987)	Description	Code (1993)
000	system condition/reserved	800
001	system condition/sign-on	801
002	system condition/sign-off	802
003	system condition/target system unavailable	803
004	system condition/message originator's system in back-up mode	804
005	system condition/special instructions	805
006	system condition/initiate alternative routing	806
007-039	system condition/reserved for ISO use	807-809
100	system security/reserved	810
101	system security/key	811
102	system security/security alert	812
103	system security/password change	813
104	system security/device authentication	814
105-139	system security/reserved for ISO use	815-819
200	system accounting/reserved	820
201	system accounting/initiate cut-off	821
202	system accounting/cut-off complete	822
203-239	system accounting/reserved for ISO use	823-829
300	system audit control/echo test	831
302-339	system audit control/reserved for ISO use	832-859
040-059 140-159 240-259 340-359 600-799	reserved for national use	860-879
060-099 160-199 260-299 360-399 800-999	reserved for private use	880-899

Table B.4 — Response code (1987) mapped to message reason code and action code (1993)

Code	response code/action code (1987)	message reason code (1993)	action code (1993)
00	approved or completed successfully/approve		000, 300, 600, 800, 900
01	refer to card issuer/decline		107
02	refer to card issuer special conditions		108
03	invalid merchant	4500 (chargebacks)	109 (in authorization and financial transactions)
04	pick-up/pick -up		200
05	do not honour		100
06	error		913
07	pick-up card, special condition/pick-up		207
08	honour with identification/approve		001
09	request in progress		901
10	approved for partial amount/approve		002
11	approved (VIP)/approve		003
12	invalid transaction	4501 (chargebacks)	902 (in response messages)
13	invalid amount		110
14	invalid card number (no such number)		111
15	no such issuer/decline		908
16	approved, update track 3/approve		004
17	customer cancellation	4000	
18	customer dispute	4502	
19	reenter transaction/decline		903
20	invalid response	4020	
21	no action taken	4001	
22	suspected malfunction	4014, 4015, 4016, 4017	
23	unacceptable transaction fee/decline		113
24	file action not supported by receiver		301
25	unable to locate record on file		302
26	duplicate file action record, old record replaced		303
27	file action field edit error		304

Table B.4 — Response code (1987) mapped to message reason code and action code (1993), continued

Code	response code/action code (1987)	message reason code (1993)	action code (1993)
28	file action file locked out		305
29	file action not successful/contact Acquirer		306
30	format error		307
31	bank not supported by switch/decline		905/908
32	completed partially	4004	
33	expired card/pick-up		201
34	suspected fraud/pick-up		202
35	card acceptor contact acquirer/pick-up		203
36	restricted card/pick-up		204
37	card acceptor call acquirer security/pick-up		205
38	allowable PIN tries exceeded/pick-up		206
39	no credit account/decline		114
40	requested function/not supported/decline		115
41	lost card/pick-up		208
42	no universal account/decline		114
43	stolen card, pick-up/pick-up		209
44	no investment account/decline		114
51	no sufficient funds/decline		116
52	no cheque account/decline		114
53	no savings account/decline		114
54	expired card/decline		101
55	incorrect PIN/decline		117
56	no card record		118
57	transaction not permitted to cardholder/decline		119
58	transaction not permitted to terminal/decline		120
59	suspected fraud/decline		102
60	card acceptor contact acquirer/decline		103
61	exceeds withdrawal amount limit/decline		121
62	restricted card/decline		104
63	security violation		122
64	original amount incorrect/decline	4005	110
65	exceeds withdrawal frequency limit/decline		123
66	card acceptor call acquirer's security department/decline		105

Table B.4 — Response code (1987) mapped to message reason code and action code (1993), concluded

Code	response code/action code (1987)	message reason code (1993)	action code (1993)
67	hard capture (requires that card be picked-up at ATM/pick-up)		200
68	response received too late	4006	
75	allowable number of PIN tries exceeded/decline		106
90	cut-off is in process (Switch ending a day's business and starting the next. Transaction can be sent again in a few minutes).		906
91	issuer or switch is inoperative/decline		907
92	financial institution or intermediate network facility cannot be found for routing/decline		908
93	transaction cannot be completed. Violation of law/decline		124
94	duplicate transmission		913
95	reconcile error		915
96	system malfunction		909

Table B.5 — Settlement code (1987) mapped to action code (1993)

Code (1987)	Description	Code (1993)
1	in balance	500
2	out of balance	501
3	error	915
4	not reconciled, totals provided	504
4-5	reserved for ISO use	505-559
6-7	reserved for national use	560-579
8-9	reserved for private use	580-599

Where codes have been deleted, there may be no direct mapping of new codes. In these cases, the new code closest in meaning has been indicated.

A complete listing of codes specified under point of service data codes is given in annex A of ISO 8583 (1993).

Table B.6 — Point of service PIN capture code (1987) mapped to point of service data (1993)

Code	1987 Description	Code	Position 12
0-3	reserved for ISO use	2-3	reserved for ISO use
4-12	the code indicates the maximum number of PIN characters accepted by the point of service device	4-C	the code indicates the maximum number of PIN characters accepted by the point of service device
13-59	reserved for ISO use	D-I	reserved for ISO use
60-79	reserved for national use	J-R	reserved for national use
80-99	reserved for private use	S-Z	reserved for private use

B.3.5.5 Point of service data code mapping

The following tables show the mapping of:

- The former point of service PIN capture code and the corresponding values in the newly defined point of service data.
- The former point of service condition code and the corresponding values in the newly defined point of service data.
- The former point of service entry mode and the corresponding values in the newly defined point of service data.

Table B.7 — Point of service condition code (1987) mapped to point of service data (1993)

Code	Description	Code	Description
00	normal presentment	(see note 1)	
01	customer not present	position 5=1-4	cardholder not present
02	unattended terminal able to retain card	position 3=1 position 4=1 position 4=3	capture unattended, on premises unattended, off premises
03	merchant suspicious	(see note 5)	
04	electronic cash register interface	(see note 2)	
05	customer present, card not present	position 5=0 position 6=0	cardholder present card not present
06	pre-authorized request	(see note 3)	
07	telephone device request	position 4=1 position 4=3	on premises of card acceptor, attended off premises of card acceptor, attended
08	mail and/or telephone order	position 5=2 position 5=3	mail order telephone order
09	security alert	(see note 5)	
10	customer identity verified	position 8=1 through 6	PIN, electronic signature analysis, biometrics, biographic, manual, other
11	suspected fraud	(see note 5)	
12	security reasons	(see note 5)	
13	representation of item	(see note 3)	
14	public utility terminal	(see note 2)	
15	customer terminal (home terminal)	position 4=4	off premises of card acceptor, unattended
16	administration terminal	(see note 2)	
17	returned item (chargeback)	(see note 4)	
18	no cheque in envelope/all returned	(see note 5)	
19	deposit out of balance/all returned	(see note 5)	
20	payment out of balance/all returned	(see note 5)	
21	manual reversed	(see note 4)	
22	terminal error/counted	(see note 3)	
23	terminal error/not counted	(see note 3)	
24	deposit out of balance (applied contents)	(see note 5)	
25	payment out of balance (applied contents)	(see note 5)	
26	withdrawal had error/reversed	(see note 4)	
27	unattended terminal unable to retain card	position 3=0 position 4=2 position 4=4	no capture on premises of card acceptor, unattended off premises of card acceptor, unattended

Note 1 - "Normal presentment" dependent upon type of transaction as defined by processing code and point of service data.

Note 2 - There is no matching code as no standard terminal classification exists.

Note 3 - Handled via the function code.

Note 4 - Handled via the message type identifier (MTI).

Note 5 - Handled via the message reason code.

**Table B.8 — Point of service entry mode (1987)
mapped to point of service data (1993)**

Code	Positions 1 and 2	Code	Position 7
00	unspecified	0	unknown
01	manual	1	manual - embossed
		6	manual - key entered
02	magnetic stripe	2	magnetic stripe
03	bar code	3	bar code
04	OCR	4	OCR
05	ICC	5	ICC
position 3		position 12	
0	unspecified entry	1	device PIN capture capability unknown
1	PIN capability	4-C	number of PIN digits captured
2	no PIN entry capability	0	no PIN capture capability

B.3.6 Usage of data elements

The following tables provide comparison, for each message class, of the mandatory and conditional data elements required under the 1987 edition with those required under the 1993 edition of this International Standard. The reasons for changing the usage of data elements are given in following notes:

- A This is a message matching data element and must be the same as in the original request or advice (see 5.2 of ISO 8583:1993).
- B This is not a message matching data element and is therefore optional or conditional in a response (see 5.2 of ISO 8583:1993).
- C This is replaced by date and time, local transaction as a matching data element.
- D Added to support reconciliation or reconciliation of fees.
- E Point of service data code incorporates the former point of service condition code, point of service entry mode and point of service PIN capture code.
- F No international usage/requirement identified.
- G Added to support international usage/requirement.
- H Function code incorporates former file update code, network management information code and some response codes.
- I Acquirer may not have information.
- J This is a transaction matching data element and is therefore not required in a response (see 5.3 of ISO 8583:1993).
- K Revised use of amount and fee data elements.
- L Generic message is now used.
- M This is not a transaction matching data element.
- N Identifies the card issuer.
- O Optional for reconciliation.
- P Action code incorporates former settlement code.
- R Reason for file action message and PAN affected.

Table B.9 - Data Elements by Message Class

Table B.9 - Data Elements by Message Class																	
Bit (1987)	Condition Codes (1987)								Authorization Messages	Bit (1993)	Condition Codes (1993)						N O T E
	0100 0101	0102 0103	0110	0112	0120 0121	0122 0123	0130	0132			1100 1101	1110	1120 1121	1130	1140		
1	11	11	11	11	11	11	11	11	11	bit map extended	1						
2	07	07	07	07	07	07	07	07	07	primary account number	2	07	16	07	07		
3	M	M	M	M	M	M	M	M	M	processing code	3	M	27	M	M		
4	M	M	M	M	M	M	M	M	M	amount, transaction	4	26	26	26	26		
7	M	M	M	M	M	M	M	M	M	date and time, transmission	7						
11	M	M	M	M	M	M	M	M	M	systems trace audit number	11	M	ME	M	M		
12+13										date and time, local transaction	12	M	ME	M	M		
										date, effective	13	02		02	02		
14	02				02					date, expiration	14	02		02	02		
19	09	09	09	09	09	09	09	09	09	country code, acquiring institution	19						
20	09	09	09	09	09	09	09	09	09	country code, primary account number	20						
21	09	09	09	09	09	09	09	09	09	country code, forwarding institution	21						
22	08	08			08	08				point of service entry mode					E		
										point of service data code	22	M	M	M	E		
23	02				02					card sequence number	23	02		02			
24			16	16			16	16	16	network international identifier					F		
										function code	24	M	M	M	H		
25	02				02					point of service condition code					E		
26	14	14			14	14				point of service PIN capture code					E		
										card acceptor business code	26	M	M	M	G		
27	18				18					approval code length	27	18					
										date, reconciliation	28		12	12	D		
										reconciliation indicator	29		14	14	D		
										amounts, original	30	08	21	08	K		
32	M	M	M	M	M	M	M	M	M	acquiring institution identification code	32	M	ME	M	A		
33	10	10	10	10	10	10	10	10	10	forwarding institution identification code	33	10	10	10			

Table B.9 - Data Elements by Message Class, continued

Bit (1987)	Condition Codes (1987)										Authorization Messages, continued	Bit (1993)	Condition Codes (1993)							N O T E
	0100 0101	0102 0103	0110	0112	0120 0121	0122 0123	0130	0132	1100 1101	1110			1120 1121	1130	1140					
34	15	15	15	15	15	15	15	15	15	15	primary account number, extended	34	15	16	15	16	15	A		
35											Track 2 data	35	06		06		06	G		
36											Track 3 data	36	06		06		06	G		
39		M	M	M	M	M	M	M	M	M	action code (was response code)	39		M	M	M	M			
40											service code (was service restriction code)	40	02		02		02			
41			16	16			16	16			card acceptor terminal identification	41		16		16				
42											card acceptor identification code	42		16		16				
45											track 1 data	45	06		06		06	G		
											amounts, fees	46	01	01	01	01	01	D		
49	M	M	M	M	M	M	M	M	M	M	currency code, transaction	49	26	16	26	16	26			
54											additional amounts	54								
											authorizing agent institution identification code	58		20	20		20	G		
											transport data	59		16		16		G		
66	09	09	09	09	09	09	09	09	09	09	country code, receiving institution									
100	19	19	19	19	19	19	19	19	19	19	receiving institution identification code	100	19	19	19	19	19			

Table B.9 - Data Elements by Message Class, continued:

Bit (1987)	Condition Codes (1987)								Financial messages	Bit (1993)	Condition Codes (1993)							N O T E
	0200 0210	0202 0203	0210	0212	0220 0221	0222 0223	0230	0232			1200 1201	1210	1220 1221	1230	1240			
1	11	11	11	11	11	11	11	11	bit map extended	1								
2	07	07	07	07	07	07	07	07	primary account number	2	07	16	07	16	07	A		
3	M	M	M	M	M	M	M	M	processing code	3	M	27	M	ME	M	A		
4	M	M	M	M	M	M	M	M	amount, transaction	4	M	M	M	M	M			
5	05	05	05	05	05	05	05	05	amount, reconciliation	5		05		05	05	I		
7	M	M	M	M	M	M	M	M	date and time, transmission	7						C		
9	05	05	05	05	05	05	05	05	conversion rate, reconciliation	9		05		05	05	I		
10									conversion rate, cardholder billing	10	04	04	04	04	04			
11	M	M	M	M	M	M	M	M	systems trace audit number	11	M	ME	M	ME	M	A		
12+13									date and time, local transaction	12	M	ME	M	ME	M	A		
14	02				02				date, effective	13	02		02		02	G		
16	05	05	05	05	05	05	05	05	date, expiration	14	02		02		02			
17					M				date, conversion	16		05		05	05			
19	09	09	09	09	09	09	09	09	date, capture	17		22			22			
20	09	09	09	09	09	09	09	09	country code, acquiring institution	19								
21	09	09	09	09	09	09	09	09	country code, primary account number	20								
22	08	08			08	08			country code, forwarding institution	21								
									point of service entry mode									
									point of service data code	22	M		M		M	E		
23	02		16		02		16		card sequence number	23	02		02		02	B		
24			16	16			16	16	network international identifier							F		
									function code	24	M		M		M	H		
25	02				02				point of service condition code							E		
26	14	14			14	14			point of service PIN capture code							E		
									card acceptor business code	26	M		M		M	G		

Table B.9 - Data Elements by Message Class, continued

Table B.9 - Data Elements by Message Class, continued																			
Bit (1987)	Condition Codes (1987)								Financial messages, continued	Bit (1993)	Condition Codes (1993)								N O T E
	0200 0201	0202 0203	0210	0212	0220 0221	0222 0223	0230	0232			1200 1201	1210	1220 1221	1230	1240				
27	18					18				approval code length	27	18							
										date, reconciliation	28		12		12		12	D	
										reconciliation indicator	29		14		14		23	D	
										amounts, original	30	08	21	08		08		K	
32	M	M	M	M	M	M	M	M		acquiring institution identification code	32	M	ME	M	ME	M		A	
33	10	10	10	10	10	10	10	10		forwarding institution identification code	33	10	10	10	10	10			
34	15	15	15	15	15	15	15	15		primary account number, extended	34	15	16	15	16	15		A	
35										track 2 data	35	06		06		06			
36										track 3 data	36	06		06		06		G	
37	02		16		02			16		retrieval reference number	37		16		16				
39	17	M	M	M	17	M	M	M		action code (was response code)	39		M	M	M	M			
40										service code (was service restriction code)	40	02		02		02			
41			16	16				16	16	card acceptor terminal identification	41		16		16				
42										card acceptor identification code	42		16		16				
43	M				M					card acceptor name/location	43	M		M		M			
45										track 1 data	45	06		06		06		G	
										amounts, fees	46	01	01	01	01	01		D	
49	M	M	M	M	M	M	M	M		currency code, transaction	49	M	ME	M	ME	M			
50	05	05	05	05	05	05	05	05	05	currency code, reconciliation	50		05		05	05		I	
51										currency code, cardholder billing	51	04	04	04	04	04			
										authorizing agent institution identification code	58		20	20		20		G	
										transport data	59		16		16			G	
66	09	09	09	09	09	09	09	09	09	country code, receiving institution	66								
100	19	19	19	19	19	19	19	19	19	receiving institution identification code	100	19	19	19	19	19			
102	12	12	12			12	12	12		account identification 1	102								
103	12	12	12	12	12	12	12	12		account identification 2	103								