INTERNATIONAL STANDARD ISO 4909

Bank cards — Magnetic stripe data content for track 3

Cartes bancaires — Zone magnétique — Contenu en données de la piste 3

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FOREWORD

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up 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.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 4909 was developed by Technical Committee ISO/TC 68, *Banking procedures*, and was circulated to the member bodies in March 1977.

It has been approved by the member bodies of the following countries :

Austria	Ireland	Sweden
Belgium	Italy	Switzerland
Canada	Mexico	United Kingdom
Czechoslovakia	Netherlands	U.S.A.
Finland	New Zealand	U.S.S.R.
Germany	Philippines	
Hungary	Spain	

The member body of the following country expressed disapproval of the document on technical grounds :

France

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0 INTRODUCTION

This International Standard recognizes the need for formats of track 3 which can be used independently of, or in conjunction with, track 2 as defined in ISO 3554. This approach is intended to permit the greatest degree of flexibility within the financial community in facilitating international interchange.

1 SCOPE AND FIELD OF APPLICATION

This International Standard establishes specifications for those cards issued by or acceptable to the banking industry and is intended to permit interchange based on the use of magnetic stripe encoded information. It specifies the data content and physical location of read/write information on track 3 and is to be used in conjunction with the relevant parts of those documents quoted in clause 2.

Using track 3 in conjunction with track 2 is a normal mode of operation in both on-line and off-line interchange environments. This mode of operation requires that the original encoded data on track 2 be read; the data on track 3 be read; and if update is required, all the data on track 3 be rewritten.

Independent use of track 3 is an alternative mode of operation permitting both on-line and off-line interchange based on mutual agreement between interested parties. It requires reading only of the data on track 3 and, if update is required, the rewriting of all the data on track 3.

2 REFERENCES

ISO 2894, *Embossed credit cards — Specification, numbering system and registration procedure.*

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

ISO 3554, *Credit cards — Magnetic stripe encoding for tracks 1 and 2.*

ISO 3554/Add. 1, *Credit cards — Magnetic stripe encoding — Addendum 1 : Track 3.*

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

3 DEFINITIONS

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

3.1 bank card : A card generally used to identify parties to a financial transaction, and to provide input data for a transaction.

3.2 cycle period : A fixed or predetermined period of time qualifying the validity of certain transactions.

3.3 PAN (primary account number) : The assigned number that identifies the card issuer and card holder. This number is composed of an issuer identification, individual account identification, and an accompanying check digit, as specified in clause 6 of ISO 2894, and supplemented by annex A of this International Standard.

Any number embossed on the account number line shall conform to ISO 2894.

NOTE — When the major industry identifier 59 is used, the PAN, followed by the numeric country code, may be embossed, left adjusted in the uppermost line in the name and address area on the card and it shall be preceded by the printed letters MAG.

3.3.1 issuer identification : The major industry identifier and issuer identifier as described in 6.2 of ISO 2894 as supplemented by annex A of this International Standard.

3.3.2 individual account identification : The individual account identification as described in 6.4 of ISO 2894.

3.3.3 check digit : The check digit character as described in 6.5 of ISO 2894.

3.4 SAN-1 : The first optional subsidiary account identification held in addition to PAN (see 8.21).

3.5 SAN-2 : The second optional subsidiary account identification held in addition to PAN and SAN-1 (see 8.23).

3.6 PIN (personal identification number) : The secret code used by a cardholder to authenticate card ownership.

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4 PHYSICAL CHARACTERISTICS OF THE CARD

The card shall conform in all respects to the specifications contained in clause 3 of ISO 3554.

5 LOCATION AND DIMENSIONS OF EMBOSSED DATA

If present, all embossed data on the card shall conform to the specification contained in clause 5 of ISO 2894.

6 PHYSICAL AND PERFORMANCE CHARACTER-ISTICS OF THE MAGNETIC MATERIAL

6.1 Physical characteristics

The physical characteristics and location of the magnetic material shall conform in all respects to the requirements of clause 4 of ISO 3554/Add. 1.

6.2 Performance characteristics

The performance characteristics of the magnetic materials for the card shall conform in all respects to the specifications contained in clause 5 of ISO 3554/Add. 1.

7 ENCODING SPECIFICATIONS

Encoding specifications shall conform in all respects to the requirements of clause 6 of ISO 3554/Add. 1.

8 DATA CONTENT OF TRACK 3

The sequence and length of data fields shall be as shown in table 1, with details as follows :

8.1 Field 1 : start sentinel

Purpose : To identify the start of data. The start sentinel is the first data character encoded on the track.

Format : One character.

Content : Row 11 of 6.6.2 of ISO 3554.

8.2 Field 2 : format code

Purpose : To identify the data format on track 3.

Format : Two digits.

Content : 00 — Invalid for international interchange.

01 — The layout shall conform to table 1 of this International Standard.

02-19 — Reserved for future allocation by ISO/TC 68.

20-89 — Reserved for future allocation by ISO/TC 95/SC 17.

90-99 — Available for use by individual card issuers but not for international interchange.

NOTE — Card issuers wishing to use codes in the range 02-89 shall apply, through their national standards organization, to the appropriate ISO Committee.

8.3 Field 3 : primary account number (PAN)

Purpose : To identify the card issuer to which the transaction is to be routed and to identify the card holder.

Format : As defined in 3.3 of this International Standard, and as further described in annex A.

Content : Issuer identification — variable from 3 to 11 characters.

Individual account identification — up to 23 characters.

Check digit — 1 character.

NOTE — In dual track operation, where the PAN is encoded on track 2, then the encoding of PAN on track 3 is optional. Where PAN is encoded on track 3, all components shall appear.

8.4 Field 4 : field separator (FS)

Purpose : To indicate the end of the PAN (field 3), whether PAN is encoded or not.

Format : One character.

Content : Row 13 of 6.6.2 of ISO 3554.

8.5 Field 5 : country code

Purpose : To identify the country to which transaction data generated by the card shall be routed, when major industry identifier 59 is used.

Format : Three digits in the form CCC, where present, or a one-character FS (see "content").

Content : CCC — To conform with ISO 3166 for the designation of numeric country code;

FS — Row 13 of 6.6.2 of ISO 3554.

8.6 Field 6 : currency

Purpose : To denote the type of currency to be employed when calculating for update.

Format : Three digits.

Content : Three zeros in the currency field indicate that the card is not available for international interchange. All other codes shall signify the numeric currency code contained in ISO 4217.

8.7 Field 7 : currency exponent

Purpose : To determine the base value of the amount authorized (8.8) and amount remaining (8.9) fields.

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Format : One digit.

Content : A digit denoting the power of ten by which the contents of the amount authorized (8.8) and the amount remaining (8.9) fields must be multiplied to express them in the major currency unit of the currency specified in 8.6.

NOTE — It is recommended that all cards issued at any one time contain the same exponent of the currency concerned and that the currency exponent should not exceed the value of the permitted currency exponent range in annex B.

8.8 Field 8 : amount authorized per cycle period

Purpose : To denote the amount which is used to reset the amount remaining (8.9).

Format : Four digits.

Content : All zeros indicate that no debits are permitted.

8.9 Field 9 : amount remaining this cycle

Purpose : To denote the remaining available balance of amount authorized for the current cycle period. It is expressed as the nearest unit of the currency in the amount authorized field (8.8).

Format : Four digits.

Content : On the first use after the commencement of each new cycle period, this field shall first be reset to the value shown in the amount authorized field (8.8). Thereafter it shall contain the amount remaining this cycle.

8.10 Field 10 : cycle begin

Purpose : To denote the date on which a new cycle period begins. This field may also be used to define the date on which the card becomes valid.

Format : YDDD, where :

Y is the least significant digit of the year;

DDD is the sequential number of the day within the year in the range 001 to 366.

Content : The field shall be updated to the current date when the value of the cycle begin field plus the value of the cycle length field (8.11) is less than or equal to the current date, unless the cycle length field (8.11) is set in the range 80-99.

8.11 Field 11 : cycle length

Purpose : To denote the period of time during which the accumulated sum of all debit transactions shall not exceed the amount authorized (8.8).

Format : Two digits.

Content : 00 — A card on which the amount remaining this cycle field shall not be reset.

01-79 — The number of days in the cycle period.

80 — The cycle period shall be of 7 days duration, and the cycle begin field (8.10) shall be updated only by the addition of multiples of 7.

81 — The cycle period shall be of 14 days duration, and the cycle begin field (8.10) shall be updated only by the addition of multiples of 14.

82 — The cycle period shall begin only on the first or fifteenth day of a calendar month, whichever is appropriate.

83 — The cycle period shall begin on the same date of every calendar month commencing on the date represented by the cycle begin field (8.10) which was set at card issue.

84 — The cycle period shall begin on the same date of every third calendar month commencing on the date represented by the cycle begin field (8.10) which was set at card issue.

85 — The cycle period shall begin on the same date every sixth calendar month commencing on the date represented by the cycle begin field (8.10) which was set at card issue.

86 — The cycle period shall begin on the anniversary of the date represented by the cycle begin field (8.10) which was set at card issue.

87-89 — Reserved for future allocation by ISO/TC 68.

8.12 Field 12 : retry count

Purpose : To record the number of outstanding attempts available to enter the personal identification number (PIN) associated with the card.

Format : One digit.

Content : This field shall be set at card issue and subsequently reset after each successful entry of the PIN. It shall be decremented by one for each incorrect entry of the PIN.

In interchange the reset value shall be 3.

NOTE — The card shall be invalid for all interchange purposes if the content of this field is zero.

8.13 Field 13 : personal identification number control parameters (PINPARM)

Purpose : To provide an optional security feature in the form of an algorithm code and an offset value.

Format : Six numeric digits in the form AAOOOO, where present, or a one-character FS, where :

AA is the algorithm identification;

OOOO is the offset value;

FS is the field separator.

Content : AA — Value 00 indicates that no algorithm is used; values 01-99 to be defined by ISO/TC 68.

0000 — That number which, when applied to the result of the algorithm calculation, will validate the personal identification number.

FS — Row 13 of 6.6.2 of ISO 3554.

8.14 Field 14 : interchange control

Purpose : To indicate whether interchange is permitted on this card.

Format : One digit.

Content : 0 — No restriction.

1 — Not available for international interchange.

2-9 — Interchange restricted.

NOTE — If interchange is restricted, card usage is limited to a specific locale, city or country and should not be accepted without prior arrangements with the card issuer.

8.15 Field 15 : type of account (TA) and service restriction (SR) — PAN

Purpose : To define TA and SR.

a) The TA digit defines the type of account recorded in the individual account identification in field 8.3.

b) The SR digit provides for control of interchange and control of debits, credits and transfers applied to the account number in field 8.3.

Format : Two digits.

Content : a) *Type of account — first digit*

0 — PAN not encoded on track 3.

1 — Savings account.

2 — Current or checking account.

3 — Credit card account.

4 — A common number applicable to more than one type of account, for example universal account number.

5-8 — Reserved for allocation by ISO/TC 68.

9 — Available for issuer's internal use and not for interchange.

b) *Service restrictions — second digit*

0 — No restrictions.

1 — Debits prohibited.

2 — Credits prohibited.

3 — Only credit transactions shall be permitted.

4-7 — Reserved for allocation by ISO/TC 68.

8-9 — Available for issuer's internal use.

NOTES

1 With service restrictions 8 and 9, card usage is limited to a specific locale, city or country and should not be accepted without prior arrangements with the card issuer.

2 Card issuers requiring codes in the ranges reserved for allocation by ISO/TC 68 shall apply to the appropriate committee of their national standards organization.

8.16 Field 16 : type of account and service restrictions — SAN-1

Purpose : As specified in 8.15 but the content of this field shall refer to the account number contained in the SAN-1 (8.21).

Format : Two digits.

Content : As specified in 8.15 except that TA with a value of zero indicates that SAN-1 (8.21) is not encoded on track 3.

8.17 Field 17 : type of account and service restrictions — SAN-2

Purpose : As specified in 8.15 but the content of this field shall refer to the account number contained in the SAN-2 (8.23).

Format : Two digits.

Content : As specified in 8.15 except that TA with a value of zero indicates that SAN-2 (8.23) is not encoded on track 3.

8.18 Field 18 : expiry date

Purpose : To indicate the date after which the card ceases to be valid.

Format : Four digits in the form YYMM, where present, or a one-character FS, where :

YY is the year of expiry;

MM is the month of expiry;

FS is the field separator.

Content : YY — Two digits to signify the year during which the card ceases to be valid.

MM — the numeric sequence of the month within the year. The card ceases to be valid after the last day of the month specified.

FS — Row 13 of 6.6.2 of ISO 3554 indicates that no explicit expiry date is encoded on track 3.

8.19 Field 19 : card sequence number

Purpose : To distinguish between separate cards (issued concurrently or consecutively) with the same PAN.

Format : One digit.

Content : At issuer's discretion.

NOTE — This field shall be set at original issue or at the renewal of the card following expiration. It should be incremented each time an additional or replacement card is issued.

8.20 Field 20 : card security number

Purpose : To relate the data contained on the magnetic stripe to the physical card.

Format : Nine digits in the form MCCCCCCCC, where present, or a one-character FS where :

M is the security method identifier;

CCCCCCCC is the code which enables the relationship between data and card to be established;

FS is the field separator.

Content : M — To be defined.

CCCCCCCC — To be defined.

FS — Row 13 of 6.6.2 of ISO 3554 indicates that no method relating encoded data and card is used.

8.21 Field 21 : first subsidiary account number (SAN-1)

Purpose : To identify the first optional subsidiary account.

Format : Variable, including zero length.

Content : Any numeric value.

8.22 Field 22 : field separator

Purpose : To terminate, or to indicate the absence of, SAN-1.

Format : One character.

Content : Row 13 of 6.6.2 of ISO 3554.

8.23 Field 23 : second subsidiary account number (SAN-2)

Purpose : To identify the second optional subsidiary account.

Format : Variable, including zero length.

Content : Any numeric value.

8.24 Field 24 : field separator

Purpose : To terminate, or to indicate the absence of, SAN-2.

Format : One character.

Content : Row 13 of 6.6.2 of ISO 3554.

8.25 Field 25 : relay marker

Purpose : To provide the facility whereby the length of interchange messages passing between banks' computer centres may be reduced. An indicator will show whether or not the interchange message is to include the contents of the discretionary data field (8.27).

Format : One digit.

Content : 0 — Include all discretionary data.

1 — Do not include discretionary data.

2-9 — Invalid.

8.26 Field 26 : crypto check digits (CCD)

Purpose : To provide a means of verifying the integrity of the data elements on track 3 through application of a cryptographic formula.

Format : Six digits, where present, or a one-character FS.

Content : Six digits to be defined by ISO/TC 68.

FS — Row 13 of 6.6.2 of ISO 3554 indicates that no CCD is present.

8.27 Field 27 : discretionary data

Purpose : To contain data meaningful to the card issuer. The contents of this field will be contained in the interchange message passing between the device operator and the card issuer if the relay marker (8.25) is zero.

Format : Variable, including zero length.

Content : Any numeric value.

8.28 Field 28 : end sentinel

Purpose : To indicate the termination of meaningful data on track 3.

Format : One character.

Content : Row 15 of 6.6.2 of ISO 3554.

8.29 Field 29 : longitudinal redundancy check (LRC)

Purpose/Content : The LRC character shall conform in all respects to the specification contained in 6.6.3 of ISO 3554.

Format : One character.