International Standard ISO 2033

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION•МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ•ORGANISATION INTERNATIONALE DE NORMALISATION

Information processing — Coding of machine readable characters (MICR and OCR)

Traitement de l'information — Codage des jeux de caractères pour reconnaissance automatisée (MICR et ROC)

Second edition — 1983-05-15

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (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 authorized 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 2033 was developed by Technical Committee ISO/TC 97, *Information processing systems*, and was circulated to the member bodies in February 1982.

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

Belgium	Hungary	South Africa, Rep. of
Canada	Italy	Spain
China	Japan	Sweden
Czechoslovakia	Netherlands	Switzerland
Egypt, Arab Rep. of	Norway	United Kingdom
France	Poland	USA
Germany, F.R.	Romania	

No member body expressed disapproval of the document.

This second edition cancels and replaces the first edition (i.e. ISO 2033-1972).

Information processing — Coding of machine readable characters (MICR and OCR)

1 Scope

This International Standard defines the coded representation of printed characters recognized by reading equipment. It includes the fonts:

E 13 B	as covered in ISO 1004
CMC 7	as covered in ISO 1004
OCR-A	as covered in ISO 1073/1
OCR-B	as covered in ISO 1073/2

2 Field of application

This International Standard assigns bit-patterns to characters recognized by reading equipment. This coded information generated by the reading equipment is given to the recipient by different media, such as magnetic tape, by data transmission or a direct link. This coded representation can also be used by printing devices to print the information which shall later be read. It is not intended for general information interchange.

Two different applications are considered:

- Single-font reader:

  The reading equipment is only capable of recognizing one font at a time.

- Multiple-font reader:

  The reading equipment is capable of recognizing multiple fonts at the same time.

3 References

ISO 646, *Information processing — 7-bit coded character set for information interchange.*

ISO 1004, *Information processing — Magnetic ink character recognition — Print specifications.*

ISO 1073, *Alphanumeric character sets for optical recognition*

    — Part 1: Character set OCR-A — Shapes and dimensions of the printed image.

    — Part 2: Character set OCR-B — Shapes and dimensions of the printed image.

ISO 2022, *Information processing — ISO 7-bit and 8-bit coded character sets — Code extension techniques.*

4 Coding

The coding given in this International Standard is based on the 7-bit code described in ISO 646 and on its extension to 8 bits according to ISO 2022.

The empty positions in code tables 1 to 5 are reserved for future standardization.

This International Standard does not define the character set to be read by the reading equipment.

Two codings are shown. The 8-bit coding is primarily intended for use with multi-font readers in the case where the 7-bit coding is not sufficient to represent the needed characters.

Independent of the coding shown in this International Standard, the code extension techniques given in ISO 2022 are applicable, i.e. the 7-bit coding shown in this International Standard may be transformed into 8-bit coding and the 8-bit coding shown in this International Standard may be transformed into 7-bit coding according to the rules of ISO 2022. Furthermore, the characters of columns 10 to 15 can equally be designated as a G1, G2 or G3 set.

References to positions of tables 1 to 5 in tables 6 to 9 are given by the notation "column number/row number". The column numbers for 7-bit coding consist of one digit and those for 8-bit coding consist of two digits. The notations b_1 to b_8 refer to the 7 bits or 8 bits of the coding whereby, b_1 is the low order bit.

Example

Capital letter F is shown in position 4/6 of the 7 bit table and 04/6 of the 8-bit table. This corresponds to bit pattern 1000110 and 01000110 respectively.

4.1 7-bit coding

The 7-bit coding can be used whenever the number of characters shown is sufficient for the application. This coding can also be used within an 8-bit environment by adding an eighth bit with the value 0, as defined in ISO 2022.

4.2 8-bit coding

The 8-bit coding can be used whenever the number of characters in a 7-bit table is insufficient for the application. The 8-bit coding can also be used within a 7-bit environment as defined in ISO 2022.