

INTERNATIONAL STANDARD

ISO
9282-1

First edition
1988-09-01



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

Information processing — Coded representation of pictures —

Part 1:

Encoding principles for picture representation in a 7-bit
or 8-bit environment

Traitemet de l'information — Représentation codée de l'image —

*Partie 1: Principes de codage pour la représentation d'image dans un environnement codé
à 7 et à 8 éléments*

Contents

	Page
Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Definitions and notation	1
3.1 Definitions	1
3.2 Notation	1
3.2.1 7-bit byte	1
3.2.2 8-bit byte	2
3.2.3 Byte interpretation	2
3.3 Layout of the code table	2
3.3.1 7-bit representation	2
3.3.2 8-bit representation	2
4 Encoding principles	2
5 Encoding principles for opcodes	2
5.1 General	2
5.2 Compact opcode encoding	4
5.3 Extensible opcode encoding	4
5.3.1 Encoding technique of the basic opcode set	4
5.3.2 Extension mechanism	4
6 Encoding principles for operands	5
6.1 General	5
6.2 Format definitions	5
6.2.1 Basic format	5
6.2.2 Bitstream format	6
6.2.3 String format	6
6.3 General datatypes	7
6.3.1 Unsigned integers	7
6.3.1.1 Unsigned integers in the basic format	8
6.3.1.2 Unsigned integers in the bitstream format	8
6.3.2 Signed integers	8
6.3.2.1 Signed integers in the modulus-and-sign notation using the basic format	10
6.3.2.2 Signed integers in the two's complement notation using the basic format	11
6.3.2.3 Signed integers in the modulus-and-sign notation using the bitstream format	12

6.3.2.4	Signed integers in the two's complement notation using the bitstream format	13
6.3.3	Real numbers	13
6.3.3.1	Real numbers in the basic format	14
6.3.3.2	Real numbers in the bitstream format	17
6.3.4	Coordinates (2-dimensional)	20
6.3.4.1	Coordinates using real numbers	20
6.3.4.2	Coordinates interleaved coordinate pairs	20
6.3.5	Coordinates (3-dimensional)	20
6.3.5.1	Coordinates using real numbers	20
6.3.5.2	Coordinates interleaved coordinate triplets	21
6.3.6	Point lists in displacement mode	21
7	Conformity	22
Annex A	List and definition of state variables	23

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 approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 9282-1 was prepared by Technical Committee ISO/TC 97, *Information processing systems*.

ISO 9282 consists of the following parts, under the general title *Information processing — Coded representation of pictures*:

- *Part 1: Encoding principles for picture representation in a 7-bit or 8-bit environment*

Annex A forms an integral part of this part of ISO 9282.

Introduction

This International Standard provides standard methods for picture coding in order to assist in coding system design and to prevent a proliferation of different unrelated coding techniques.

This part of ISO 9282 provides a coding scheme for the representation of pictures that can be generated by the majority of computer graphics applications; based on a 7-bit structure, this coding scheme may be used in a 7-bit or 8-bit environment.

Information processing — Coded representation of pictures —

Part 1: Encoding principles for picture representation in a 7-bit or 8-bit environment

1 Scope

This part of ISO 9282 defines

- the coding principles to be used in interchanging pictures consisting of graphic images in a 7-bit or 8-bit environment;
- the data structures to be used to represent the primitives describing a picture;
- the general datatypes which can be used as operands within a primitive.

This part of ISO 9282 does not deal with the presentation semantics of pictures. These are defined in the related International Standards.

This part of ISO 9282 applies to the data streams containing data structured in accordance with picture coding methods defined in ISO 9281.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO 9282. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO 9282 are encouraged to investigate the possibility of applying the most recent editions of the standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 646 : 1983, *Information processing — ISO 7-bit coded character sets for information interchange*.

ISO 2022 : 1986, *Information processing — ISO 7-bit and 8-bit coded character sets — Code extension techniques*.

ISO 6429 : 1983, *Information processing — ISO 7-bit and 8-bit coded character sets — Additional control functions for character imaging devices*.

ISO 9281 : —¹⁾, *Information processing — Identification of picture coding methods*.

1) To be published.