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**Information technology — ASN.1 encoding  
rules: Specification of Basic Encoding  
Rules (BER), Canonical Encoding Rules  
(CER) and Distinguished Encoding Rules  
(DER)**

**iTeh STANDARDS PREVIEW**  
**AMENDMENT 1: Relative object identifiers  
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*Technologies de l'information — Règles de codage ASN.1: Spécification  
des règles de codage de base, des règles de codage canoniques et des  
règles de codage distinctives*  
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**AMENDEMENT 1: Identificateurs d'objet relatif**

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## Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this Amendment may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to International Standard ISO/IEC 8825-1:1998 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. X.690/Amd.1.

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## INTERNATIONAL STANDARD

## ITU-T RECOMMENDATION

**INFORMATION TECHNOLOGY – ASN.1 ENCODING RULES:  
SPECIFICATION OF BASIC ENCODING RULES (BER),  
CANONICAL ENCODING RULES (CER) AND  
DISTINGUISHED ENCODING RULES (DER)**

**AMENDMENT 1  
Relative object identifiers**

**1) New subclause 8.19 bis**

Add a new subclause 8.19 bis after 8.19 as follows:

**8.19 bis Encoding of a relative object identifier value**

NOTE – The encoding of the object identifier components in a relative object identifier is the same as the encoding of components (after the second) in an object identifier.

**8.19 bis 1** The encoding of a relative object identifier value shall be primitive.

**8.19 bis 2** The contents octets shall be an (ordered) list of encodings of sub-identifiers (see 8.19 bis 3 and 8.19 bis 4) concatenated together. Each sub-identifier is represented as a series of (one or more) octets. Bit 8 of each octet indicates whether it is the last in the series: bit 8 of the last octet is zero; bit 8 of each preceding octet is one. Bits 7-1 of the octets in the series collectively encode the sub-identifier. Conceptually, these groups of bits are concatenated to form an unsigned binary number whose most significant bit is bit 7 of the first octet and whose least significant bit is bit 1 of the last octet. The sub-identifier shall be encoded in the fewest possible octets, that is, the leading octet of the sub-identifier shall not have the value  $80_{16}$ .

**8.19 bis 3** The number of sub-identifiers (N) shall be equal to the number of object identifier arcs in the relative object identifier value being encoded.

**8.19 bis 4** The numerical value of the *i*th sub-identifier ( $1 \leq i \leq N$ ) is that of the *i*th object identifier arc in the relative object identifier value being encoded.

**8.19 bis 5 Example** – A relative object identifier value of:

{8571      3      2}

has sub-identifiers of 8571, 3, and 2. The resulting encoding is:

RELATIVE OBJECT IDENTIFIER	Length	Contents
$0D_{16}$	$04_{16}$	$C27B0302_{16}$

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