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

AMENDMENT 2: Time type support

*Technologies de l'information — Règles de codage ASN.1:
Spécification des règles de codage de base (BER), des règles de
codage canoniques (CER) et des règles de codage distinctives (DER)*

AMENDEMENT 2: Prise en charge du type de temps

IECNORM.COM : Click to view the full text of ISO/IEC 8825-1:2002/AMD2:2007

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

IECNORM.COM : Click to view the full PDF of ISO/IEC 8825-1:2002/AMD2:2007



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2007

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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 document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 2 to ISO/IEC 8825-1:2002 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 (2002)/Amd.2 (06/2006).

IECNORM.COM : Click to view the full PDF of ISO/IEC 8825-1:2002/AMD2:2007

**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 2: Time type support

1) Contents

Update the Contents as follows:

- 8.23 Encoding for values of the Useful Types
- 8.24 Encoding for values of the **TIME** type and the useful time types
 - 8.24.1 Encoding for values of the **TIME** type
 - 8.24.2 Encoding for values of the **DATE** type
 - 8.24.3 Encoding for values of the **TIME-OF-DAY** type
 - 8.24.4 Encoding for values of the **DATE-TIME** type
 - 8.24.5 Encoding for values of the **DURATION** type
- 11.9 The **TIME** type and the useful time types

2) Clause 8.23

Replace 8.23 with the following (giving it a heading):

8.23 Encoding for values of the Useful Types

The following "useful types" shall be encoded as if they had been replaced by their definitions given in clauses 42-44 of ITU-T Rec. X.680 | ISO/IEC 8824-1:

- generalized time;
- universal time;
- object descriptor.

3) New clause 8.24

Add the following new clause:

8.24 Encoding for values of the **TIME type and the useful time types**

8.24.1 Encoding for values of the **TIME type**

NOTE – The defined time types are subtypes of the **TIME** type, with the same tag, and have the same encoding as the **TIME** type.

8.24.1.1 The encoding of the **TIME** type shall be primitive.

8.24.1.2 The contents octets shall be the UTF-8 encoding of the value notation, after the removal of initial and final QUOTATION MARK (34) characters.

8.24.2 Encoding for values of the **DATE type**

8.24.2.1 The encoding of the **DATE** type shall be primitive.

8.24.2.2 The contents octets shall be the UTF-8 encoding of the value notation, after the removal of initial and final QUOTATION MARK (34) characters and all HYPHEN-MINUS (45) characters.

8.24.3 Encoding for values of the TIME-OF-DAY type

8.24.3.1 The encoding of the **TIME-OF-DAY** type shall be primitive.

8.24.3.2 The contents octets shall be the UTF-8 encoding of the value notation, after the removal of initial and final QUOTATION MARK (34) characters and all COLON (58) characters.

8.24.4 Encoding for values of the DATE-TIME type

8.24.4.1 The encoding of the **DATE-TIME** type shall be primitive.

8.24.4.2 The contents octets shall be the UTF-8 encoding of the value notation, after the removal of initial and final QUOTATION MARK (34) characters, all HYPHEN-MINUS (45) characters, all COLON (58) characters, and the LATIN CAPITAL LETTER T character.

8.24.5 Encoding for values of the DURATION type

8.24.5.1 The encoding of the **DURATION** type shall be primitive.

8.24.5.2 The contents octets shall be the UTF-8 encoding of the value notation, after the removal of initial and final QUOTATION MARK (34) characters and the LATIN CAPITAL LETTER P character.

4) New clause 11.9

Add the following new clause:

11.9 The TIME type and the useful time types

11.9.1 The value notation for abstract values of the **TIME**, **TIME-OF-DAY**, **DATE**, **DATE-TIME**, and **DURATION** types shall be converted to a canonical form by the following transformations:

- a) All commas used as decimal signs shall be converted to full stop.
- b) The minutes digits for all time difference components that are an integral number of hours shall be removed.
- c) If an interval or recurring interval contains a start point and an end point, and the end point contains the same time difference component as the start point, the time difference component of the end point shall be removed.
- d) For a duration, and for a duration in an interval (or in an interval in a recurring interval) expressed with a start point and a duration or with a duration and an end point, the value notation shall be modified to remove all zero time components except the least significant time component that is present in the instance of the value notation.

11.9.2 The resulting value notation shall then be used to encode the abstract value as specified in 8.24.