



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**X.690**

**Corrigendum 2**

(02/2001)

SERIES X: DATA NETWORKS AND OPEN SYSTEM  
COMMUNICATIONS

OSI networking and system aspects – Abstract Syntax  
Notation One (ASN.1)

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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)

**Technical Corrigendum 2**

ITU-T Recommendation X.690 (1997) – Corrigendum 2

(Formerly CCITT Recommendation)

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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)**

**TECHNICAL CORRIGENDUM 2**

**Summary**

This Technical Corrigendum 2 to ITU-T Rec. X.690 | ISO/IEC 8825-1:

- a) clarifies the encoding of REAL when the base of the abstract value is 10;
- b) corrects an editorial oversight; and
- c) clarifies the encoding of bitstring values that have no 1 bits and whose type has a named bit list.

**Source**

Corrigendum 2 to ITU-T Recommendation X.690 (1997) was prepared by ITU-T Study Group 7 (2001-2004) and approved on 2 February 2001. An identical text is also published as Technical Corrigendum 2 to ISO/IEC 8825-1.

## FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

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In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

## NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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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)**

**TECHNICAL CORRIGENDUM 2**

**1) New subclause 8.5.2 *bis***

*Create a new subclause as follows:*

**8.5.2 *bis*** For a non-zero real value, if the base of the abstract value is 10, then the base of the encoded value shall be 10, and if the base of the abstract value is 2 the base of the encoded value shall be 2, 8 or 16 as a sender's option.

**2) Subclause 8.5.3**

*Change subclause 8.5.3 as follows:*

**8.5.3** If the real value is non-zero, then the base used for the encoding shall be B' as specified in 8.5.2 *bis*. If B' is 2, 8 or 16, a binary encoding, specified in 8.5.5, shall be used. If B' is 10, a character encoding, specified in 8.5.6, shall be used.

*Delete the Note on subclause 8.5.3.*

**3) Subclause 8.6.2.4**

*Change the Note in subclause 8.6.2.4 to:*

NOTE – If a bitstring value has no 1 bits, then an encoder (as a sender's option) may encode the value with a length of 1 and with an initial octet set to 0 or may encode it as a bit string with one or more 0 bits following the initial octet.

**4) Clause 11**

*In clause 11 change:*

(See 8.16.1 and 8.18.1.)

*to:*

(See 8.16.1, 8.17.1, 8.18.1 and 8.21.1.)

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