
**Information technology — ASN.1
encoding rules: Specification of
Encoding Control Notation (ECN)**

AMENDMENT 2

*Technologies de l'information — Règles de codage ASN.1:
Spécification de la notation de contrôle de codage (ECN)*

AMENDEMENT 2

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Foreword

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INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

Information technology – ASN.1 encoding rules: Specification of
Encoding Control Notation (ECN)

Amendment 2: Time type support

1) Subclause 8.5

Insert the following 5 new reserved encoding class names in subclause 8.5:

#DATE
#DATE-TIME
#DURATION
#TIME
#TIME-OF-DAY

2) Subclause 9.6.6

Replace 9.6.6 with the following:

- 9.6.6** The categories of encoding class (see 16.1.3) are:
- The alternatives category (classes that are derived by class assignment from #ALTERNATIVES).
 - The concatenation category (classes that are derived by class assignment from #CONCATENATION).
 - The repetition category (classes that are derived by class assignment from #REPETITION).
 - The optionality category (classes that are derived by class assignment from #OPTIONAL).
 - The tag category (classes that are derived by class assignment from #TAG).
 - The boolean, bitstring, characterstring, integer, null, objectidentifier, octetstring, opentype, pad, ~~and~~ real, and time categories (categories for classes that are derived from the corresponding primitive classes).
 - The encoding structure category (classes generated from ASN.1 type definitions, or by explicit definition of an encoding structure).

3) Table 2

Insert the following lines into Table 2 above "GeneralizedTime":

TIME	#TIME	#TIME
DATE	#DATE	#TIME
TIME-OF-DAY	#TIME-OF-DAY	#TIME
DATE-TIME	#DATE-TIME	#TIME
DURATION	#DURATION	#TIME

4) Subclause 16.1.7

Replace 16.1.7 with the following:

16.1.7 The "BitfieldClassReference" is:

BitfieldClassReference ::=

	#NUL
	#BOOL
	#INT
	#BITS
	#OCTETS
	#CHARS
	#PAD
	#BIT-STRING
	#BOOLEAN
	#CHARACTER-STRING
	#EMBEDDED-PDV
	#ENUMERATED
	#EXTERNAL
	#INTEGER
	#NULL
	#OBJECT-IDENTIFIER
	#OCTET-STRING
	#OPEN-TYPE
	#REAL
	#RELATIVE-OID
	#TIME
	#DATE
	#DATE-TIME
	#TIME-OF-DAY
	#DURATION
	#GeneralizedTime
	#UTCTime
	#ObjectDescriptor
	#BMPString
	#GeneralString
	#GraphicString
	#IA5String
	#NumericString
	#PrintableString
	#TeletexString
	#UniversalString
	#UTF8String
	#VideotexString
	#VisibleString

The categories of the classes that these built-in names reference (see 16.1.14) are all defined to be in the bit-field group of categories.

5) Subclause 16.1.14

Insert the following lines in 16.1.14 above "#TRANSFORM":

#TIME	(primitive)	time
#DATE	#TIME	
#TIME-OF-DAY	#TIME	
#DATE-TIME	#TIME	
#DURATION	#TIME	

6) Subclause 16.2.6

Replace 16.2.6 with the following:

16.2.6 The "EncodingStructureField" is:

EncodingStructureField ::=

#NUL	
#BOOL	
#INT	Bounds?
#BITS	Size?
#OCTETS	Size?
#CHARS	Size?
#PAD	
#BIT-STRING	Size?
#BOOLEAN	
#CHARACTER-STRING	
#EMBEDDED-PDV	
#ENUMERATED	Bounds?
#EXTERNAL	
#INTEGER	Bounds?
#NULL	
#OBJECT-IDENTIFIER	
#OCTET-STRING	Size?
#OPEN-TYPE	
#REAL	
#RELATIVE-OID	
#TIME	
#DATE	
#TIME-OF-DAY	
#DATE-TIME	
#DURATION	
#GeneralizedTime	
#UTCTime	
#ObjectDescriptor	Size?
#BMPString	Size?
#GeneralString	Size?
#GraphicString	Size?
#IA5String	Size?
#NumericString	Size?
#PrintableString	Size?
#TeletexString	Size?
#UniversalString	Size?
#UTF8String	Size?
#VideotexString	Size?
#VisibleString	Size?

7) Subclause 16.2.8

Replace 16.2.8 with the following:

16.2.8 The ASN.1 values which can be associated with each primitive field are as follows:

#NUL	The null value
#BOOL	The boolean values
#INT	The integer values
#BITS	Bitstring values
#OCTETS	Octetstring values
#CHARS	Character string values
#PAD	None
#OBJECT-IDENTIFIER	Object identifier values
#OPEN-TYPE	Open type values
#REAL	Real values
#TIME	Time values
#TAG	Tag numbers

NOTE – The #PAD field cannot have associated ASN.1 values, and is never visible outside the encoding and decoding procedures.

8) **Table 5**

Insert the following in Table 5 below "real":

time	"TimeValue"
	(see ITU-T Rec. X.680 ISO/IEC 8824-1, 34 bis. 3.2)

9) **Subclause 23.15**

Replace 23.15 with the following:

23.15 Defining encoding objects for classes in the other categories

In this version of this Recommendation | International Standard, there is no defined syntax for classes in the following categories:

objectidentifier
opentype
real
time

10) **Annex G**

In Annex G, replace the corresponding productions with the following:

BitfieldClassReference ::=

#NUL
|
#BOOL
|
#INT
|
#BITS
|
#OCTETS
|
#CHARS
|
#PAD
|
#BIT-STRING
|
#BOOLEAN
|
#CHARACTER-STRING
|
#EMBEDDED-PDV
|
#ENUMERATED
|
#EXTERNAL
|
#INTEGER
|
#NULL
|
#OBJECT-IDENTIFIER
|
#OCTET-STRING
|
#OPEN-TYPE
|
#REAL
|
#RELATIVE-OID
|
#TIME
|
#DATE
|
#DATE-TIME
|
#TIME-OF-DAY
|
#DURATION
|
#GeneralizedTime
|
#UTCTime
|
#ObjectDescriptor
|
#BMPString
|
#GeneralString
|
#GraphicString
|
#IA5String
|
#NumericString
|
#PrintableString
|
#TeletexString
|
#UniversalString
|
#UTF8String
|
#VideotexString
|
#VisibleString