

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.680

Corrigendum 3
(05/2018)

SERIES X: DATA NETWORKS, OPEN SYSTEM
COMMUNICATIONS AND SECURITY

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

Information technology – Abstract Syntax Notation
One (ASN.1): Specification of basic notation

Technical Corrigendum 3

Recommendation ITU-T X.680 (2015) – Technical
Corrigendum 3

ITU-T X-SERIES RECOMMENDATIONS

DATA NETWORKS, OPEN SYSTEM COMMUNICATIONS AND SECURITY

PUBLIC DATA NETWORKS	
Services and facilities	X.1–X.19
Interfaces	X.20–X.49
Transmission, signalling and switching	X.50–X.89
Network aspects	X.90–X.149
Maintenance	X.150–X.179
Administrative arrangements	X.180–X.199
OPEN SYSTEMS INTERCONNECTION	
Model and notation	X.200–X.209
Service definitions	X.210–X.219
Connection-mode protocol specifications	X.220–X.229
Connectionless-mode protocol specifications	X.230–X.239
PICS proformas	X.240–X.259
Protocol Identification	X.260–X.269
Security Protocols	X.270–X.279
Layer Managed Objects	X.280–X.289
Conformance testing	X.290–X.299
INTERWORKING BETWEEN NETWORKS	
General	X.300–X.349
Satellite data transmission systems	X.350–X.369
IP-based networks	X.370–X.379
MESSAGE HANDLING SYSTEMS	X.400–X.499
DIRECTORY	X.500–X.599
OSI NETWORKING AND SYSTEM ASPECTS	
Networking	X.600–X.629
Efficiency	X.630–X.639
Quality of service	X.640–X.649
Naming, Addressing and Registration	X.650–X.679
Abstract Syntax Notation One (ASN.1)	X.680–X.699
OSI MANAGEMENT	
Systems management framework and architecture	X.700–X.709
Management communication service and protocol	X.710–X.719
Structure of management information	X.720–X.729
Management functions and ODMA functions	X.730–X.799
SECURITY	X.800–X.849
OSI APPLICATIONS	
Commitment, concurrency and recovery	X.850–X.859
Transaction processing	X.860–X.879
Remote operations	X.880–X.889
Generic applications of ASN.1	X.890–X.899
OPEN DISTRIBUTED PROCESSING	X.900–X.999
INFORMATION AND NETWORK SECURITY	X.1000–X.1099
SECURE APPLICATIONS AND SERVICES (1)	X.1100–X.1199
CYBERSPACE SECURITY	X.1200–X.1299
SECURE APPLICATIONS AND SERVICES (2)	X.1300–X.1499
CYBERSECURITY INFORMATION EXCHANGE	X.1500–X.1599
CLOUD COMPUTING SECURITY	X.1600–X.1699

For further details, please refer to the list of ITU-T Recommendations.

**Information technology – Abstract Syntax Notation One (ASN.1):
Specification of basic notation**

Technical Corrigendum 3

Summary

Technical corrigendum 3 to Rec. ITU-T X.680 | ISO/IEC 8824-1 clarifies the text for some lexical items and corrects misspellings in some productions.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T X.680	1994-07-01	7	11.1002/1000/3040
1.1	ITU-T X.680 (1994) Amd. 1	1995-04-10	7	11.1002/1000/3041
1.2	ITU-T X.680 (1994) Technical Cor. 1	1995-11-21	7	11.1002/1000/3282
1.3	ITU-T X.680 (1994) Technical Cor. 2	1997-12-12	7	11.1002/1000/4180
1.4	ITU-T X.680 (1994) Amd. 1/Technical Cor.1	1997-12-12	7	11.1002/1000/4179
1.5	ITU-T X.680 (1994) Amd. 2	1997-12-12	7	11.1002/1000/4181
2.0	ITU-T X.680	1997-12-12	7	11.1002/1000/4449
2.1	ITU-T X.680 (1997) Technical Cor. 1	1999-06-18	7	11.1002/1000/4700
2.2	ITU-T X.680 (1997) Amd. 1	1999-06-18	7	11.1002/1000/4698
2.3	ITU-T X.680 (1997) Amd. 2	1999-06-18	7	11.1002/1000/4699
2.4	ITU-T X.680 (1997) Technical Cor. 2	2000-03-31	7	11.1002/1000/5046
2.5	ITU-T X.680 (1997) Technical Cor. 3	2001-02-02	7	11.1002/1000/5331
2.6	ITU-T X.680 (1997) Technical Cor. 4	2001-03-15	7	11.1002/1000/5332
2.7	ITU-T X.680 (1997) Amd. 3	2001-10-29	7	11.1002/1000/5562
2.8	ITU-T X.680 (1997) Amd. 4	2001-10-29	7	11.1002/1000/5563
3.0	ITU-T X.680	2002-07-14	17	11.1002/1000/6085
3.1	ITU-T X.680 (2002) Amd. 1	2003-10-29	17	11.1002/1000/7019
3.2	ITU-T X.680 (2002) Amd. 2	2004-08-29	17	11.1002/1000/7291
3.3	ITU-T X.680 (2002) Technical Cor. 1	2005-05-14	17	11.1002/1000/8512
3.4	ITU-T X.680 (2002) Amd. 3	2006-06-13	17	11.1002/1000/8836
3.5	ITU-T X.680 (2002) Amd. 4	2007-05-29	17	11.1002/1000/9105
4.0	ITU-T X.680	2008-11-13	17	11.1002/1000/9604
4.1	ITU-T X.680 (2008) Cor. 1	2011-10-14	17	11.1002/1000/11376
4.2	ITU-T X.680 (2008) Cor. 2	2014-03-01	17	11.1002/1000/12144
5.0	ITU-T X.680	2015-08-13	17	11.1002/1000/12479
5.1	ITU-T X.680 (2015) Cor. 1	2017-05-14	17	11.1002/1000/13257
5.2	ITU-T X.680 (2015) Cor. 2	2017-10-14	17	11.1002/1000/13361
5.3	ITU-T X.680 (2015) Cor. 3	2018-05-14	17	11.1002/1000/13598
5.4	ITU-T X.680 (2015) Amd. 1	2018-05-14	17	11.1002/1000/13597

* To access the Recommendation, type the URL <http://handle.itu.int/> in the address field of your web browser, followed by the Recommendation's unique ID. For example, <http://handle.itu.int/11.1002/1000/11830-en>.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

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.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at <http://www.itu.int/ITU-T/ipr/>.

© ITU 2018

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

CONTENTS

	<i>Page</i>
1 Clause 3.8.13	1
2 Clause 11.8	1
3 Clause 12.1.2	1
4 Clause 12.9	1
5 Clause 12.13.3	2
6 Clause 12.27	2
7 Clause 12.37	2
8 Clause 13.1	2
9 Annex L	2

INTERNATIONAL STANDARD
ITU-T RECOMMENDATION**Information technology – Abstract Syntax Notation One (ASN.1):
Specification of basic notation****Technical Corrigendum 3**

Conventions used in this corrigendum: Original, unchanged, text is in normal font. Deleted text is struck-through, thus: ~~deleted text~~. Inserted text is underlined, thus: inserted text.

1 Clause 3.8.13

Delete the note.

2 Clause 11.8

Replace clause 11.8 with the following:

11.8 The NON-BREAKING HYPHEN and the HYPHEN-MINUS should be treated as identical in all names (including reserved words).

NOTE – A name such as My-Type is the same name whether it contains a HYPHEN-MINUS or a NON-BREAKING HYPHEN.

3 Clause 12.1.2

Replace clause 12.1.2 with:

12.1.2 The lexical items specified in the subclauses of this clause 12 (except multiple-line "comment", "bstring", "xmlbitstring", "hstring", "xmlhstring", ~~and~~ "cstring", "xmlcstring" and "simplestring") shall not contain white-space (see 12.6, 12.10, 12.11, 12.12, 12.13, ~~and~~ 12.14, 12.15 and 12.16). A single-line "comment" shall not contain "new-line" characters. The "non-integerUnicodeLabel" lexical item may include the NON-BREAKING-SPACE character.

4 Clause 12.9

Replace clause 12.9 with:

12.9 Real numbers

Name of lexical item – realnumber

A "realnumber" shall consist of an integer part that is a series of one or more digits, and optionally a decimal point (.). The decimal point can optionally be followed by a fractional part which is one or more digits. The integer part, decimal point or fractional part (whichever is last present) can optionally be followed by an e or E and an optionally-signed exponent which is one or more digits. The leading digit of the "realnumber" shall not be zero unless it is either the only digit or is immediately followed by a decimal point followed by a fractional part of which at least one digit is not zero. ~~The leading digit of the exponent shall not be zero unless the exponent is a single digit.~~

A "number" is also a valid instance of "realnumber". In analyzing an instance of use of this notation, a "realnumber" is distinguished from a "number" by the context in which it appears.

5 Clause 12.13.3

Replace clause 12.3.3 with:

12.13.3 ~~Some~~All instances of "xmlhstring" are also valid instances of ~~"xmlbstring" and "xmlcstring", and some instances are also valid instances of "xmlbstring"~~. In analyzing an instance of use of this notation, an "xmlhstring" is distinguished from an "xmlbstring" or "xmlcstring" by the context in which it appears.

6 Clause 12.27

Replace clause 12.27 with:

12.27 Non-integer Unicode labels

Name of lexical item – non-integerUnicodeLabel

This lexical item shall consist of an arbitrarily long sequence of ISO/IEC 10646 characters that satisfies the constraints specified in Rec. ITU-T X.660 | ISO 9834-1, 7.2.5 and identifies an arc of the International Object Identifier tree. For lexical parsing purposes, it shall not consist only of characters that would enable it to be identified as an "integerUnicodeLabel".

7 Clause 12.37

In clause 12.37, delete the line " " (SPACE).

8 Clause 13.1

In clause 13.1, replace the *DefinitiveIdentification* production with the following (deleting the first vertical bar):

```
DefinitiveIdentification ::=
    † DefinitiveOID
    | DefinitiveOIDandIRI
    | empty
```

9 Annex L

In Annex L, replace the *DefinitiveIdentification* production with the following (deleting the first vertical bar):

```
DefinitiveIdentification ::=
    † DefinitiveOID
    | DefinitiveOIDandIRI
    | empty
```

Replace the *ComponentTypeLists* production with the following (inserting a *t* in *ExtensionEndMarker*):

```
ComponentTypeLists ::=
    RootComponentTypeList
    | RootComponentTypeList "," ExtensionAndException ExtensionAdditions
      OptionalExtensionMarker
    | RootComponentTypeList "," ExtensionAndException ExtensionAdditions
      ExtensionEndMarker "," RootComponentTypeList
    | ExtensionAndException ExtensionAdditions ExtensionEndMarker ","
      RootComponentTypeList
    | ExtensionAndException ExtensionAdditions OptionalExtensionMarker
```

Delete the first occurrence of the *EncodingPrefixedType* production, and the first occurrence of the *EncodingPrefix* production, retaining the second occurrence of each:

```
EncodingPrefixedType ::=
    EncodingPrefix Type

EncodingPrefix ::=
    "[" EncodingReference EncodingInstruction "]"
```


SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	Tariff and accounting principles and international telecommunication/ICT economic and policy issues
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	Audiovisual and multimedia systems
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling, and associated measurements and tests
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects, next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems