INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

X.722

Corrigendum 2
(02/2000)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATIONS

OSI management – Structure of Management Information

Information technology – Open Systems Interconnection – Structure of management information: Guidelines for the definition of managed objects

Technical Corrigendum 2: Revision of GDMO to include ASN.1:1997

ITU-T Recommendation X.722 (1992) – Corrigendum 2

(Formerly CCITT Recommendation)

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INTERNATIONAL STANDARD ISO/IEC 10165-4
ITU-T RECOMMENDATION X.722

INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION – STRUCTURE OF MANAGEMENT INFORMATION: GUIDELINES FOR THE DEFINITION OF MANAGED OBJECTS

TECHNICAL CORRIGENDUM 2

Revision of GDMO to include ASN.1: 1997

Summary

CCITT Rec. X.722 | ISO/IEC 10165-4 provides developers of Recommendations | International Standards, that contain managed object definitions, with guidance that will:

a) encourage consistency between managed object definitions;

b) ensure the developement of such definitions in a manner compatible with the OSI management of Recommendations | International Standards;

c) reduce duplication of effort in other working groups by identifying commonly useful documentation layouts, procedures and definitions.

This technical corrigendum revises the text to include ASN.1:1997 in clauses 2.1 and 2.2.

Source

Corrigendum 2 to ITU-T Recommendation X.722 was prepared by ITU-T Study Group 4 (1997-2000) and approved on 4 February 2000. An identical text is also published as Technical Corrigendum 2 to ISO/IEC 10165-4.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. 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 Conference (WTSC), 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 WTSC 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.

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, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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TECHNICAL CORRIGENDUM 2

Revision of GDMO to include ASN.1:1997

1) Subclause 2.1

Apply the following changes:

Replace:

- ITU-T Recommendation X.680 (1995) | ISO/IEC 8824-1:1995, *Information technology – Abstract Syntax Notation One (ASN.1) – Specification of basic notation*.
- ITU-T Recommendation X.681 (1994) | ISO/IEC 8824-2:1995, *Information technology – Abstract Syntax Notation One (ASN.1) – Information object specification*.
- ITU-T Recommendation X.682 (1994) | ISO/IEC 8824-3:1995, *Information technology – Abstract Syntax Notation One (ASN.1) – Constraint specification*.
- ITU-T Recommendation X.683 (1994) | ISO/IEC 8824-4:1995, *Information technology – Abstract Syntax Notation One (ASN.1) – Parameterization of ASN.1 specifications*.
- ITU-T Recommendation X.690 (1994) | ISO/IEC 8825-1:1995, *Information technology – ASN.1 encoding rules – Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER)*.
- ITU-T Recommendation X.691 (1995) | ISO/IEC 8825-2:1995*, Information technology – ASN.1 encoding rules – Specification of Packed Encoding Rules (PER)*.

with:

- ITU-T Recommendation X.680 (1997) | ISO/IEC 8824-1:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Specification of basic notation*.
- ITU-T Recommendation X.681 (1997) | ISO/IEC 8824-2:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Information object specification.*
- ITU-T Recommendation X.682 (1997) | ISO/IEC 8824-3:1998, *Information technology – Abstract Syntax Notation One (ASN.1): Constraint specification*.
- ITU-T Recommendation X.710 (1997) | ISO/IEC 9595:1998, *Information technology – Open Systems Interconnection – Common Management Information service*.
- ITU-T Recommendation X.711 (1997) | ISO/IEC 9596-1:1998, *Information technology – Open Systems Interconnection – Common Management Information Protocol: Specification*.

2) Subclause 2.2

Remove the following paired references:

- CCITT Recommendation X.208 (1988), *Specification of abstract syntax notation one (ASN.1).*

  ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1).*
- CCITT Recommendation X.710 (1991), *Common Management Information Service Definition for CCITT Applications.*

  ISO/IEC 9595:1990, *Information technology – Open Systems Interconnection – Common management information service definition.*

– CCITT Recommendation X.711 (1991), *Common Management Information Protocol Specification for CCITT Applications.*

ISO/IEC 9596-1:1991, *Information technology – Open Systems Interconnection – Common management information protocol – Part 1: Specification.*

3) Subclause 3.7

Replace CCITT Rec. X.208 and ISO/IEC 8824 *with* ITU-T Rec. X.680 | ISO/IEC 8824-1.

4) New subclause 3.8

Insert the following new subclause and renumber the following subclauses accordingly:

3.8 ASN.1 information object class definitions

This Recommendation | International Standard makes use of the following terms defined in ITU-T Rec. X.681 | ISO/IEC 8824-2:

a) information object class;

b) value set field;

c) variable-type.

5) Subclause 6.4

Replace all occurrences of CCITT Rec. X.208 and ISO/IEC 8824 *with* ITU-T Rec. X.680 | ISO/IEC 8824-1.

6) Clause 8

Insert the following paragraph between the title of clause 8 and the title of subclause 8.1:

The GDMO templates defined in this Recommendation | International Standard may be used to specify Action types, Attribute types, Event report types and their associated ASN.1 type definitions, as an alternative to using the Information Object Class definitions specified in ITU-T Rec. X.711 | ISO/IEC 9596-1.

7) Subclause 8.2, *item f)*

Replace both occurrences of CCITT Rec. X.208 and ISO/IEC 8824 *with* ITU-T Rec. X.680 | ISO/IEC 8824-1.

8) Subclause 8.5.1

Replace:

The type specified in a Parameter template is used to fill in an `ANY DEFINED BY x` construct in a management PDU, where `x` is a field in the PDU that carries the object identifier assigned to the parameter.

with:

The type specified in a Parameter template defines the type of the variable-type value set field in an information object class, as defined in ITU-T Rec. X.681 | ISO/IEC 8824-2. This field is carried in a management PDU when that PDU carries the object identifier value assigned to that template in the context specified in that template.

9) Subclause 8.5.1.1.1

Replace:

The context is unambiguously identified by the management PDU if and only if the ANY DEFINED BY construct appears in that PDU exactly once.

with:

The context is unambiguously identified by the management PDU if and only if the PDU contains exactly one variable-type value set field.

10) Clause 9

Replace the following (including the footnote):

NOTE – ISO/IEC JTC 1/SC 21 rules dictate a periodic review for renewal of the ASN.1:1990 International Standards every one (1) year[1)]. National Bodies are asked to consider the above when reviewing the ASN.1:1990 standards. This ensures that the ASN.1:1990 standards are retained as long as needed.

Related footnote:

1) ISO/IEC JTC 1/SC 21 (SC21) reaffirmed the continuation of availability of the ASN.1:1990 standards for reasons of conformance and interpretability (in SC21 N 9001 rev). SC21 requested its WGs to continue to maintain these standards. An SC21 resolution to continue maintenance will be conducted at each SC21 meeting (currently, once a year).

with:

NOTE – ASN.1:1994 is used to mean the language specified by the 1994 or later versions of ITU-T Rec. X.680 | ISO/IEC 8824-1 and ASN.1:1990 means the language specified by CCITT Rec. X.208 and ISO/IEC 8824 which is now obsolete but previously was identified as "CCITT Recommendation X.208 (1988), *Specification of Abstract Syntax Notation One (ASN.1)*" or "ISO/IEC 8824:1990, *Information technology – Open Systems Interconnection – Specification of Abstract Syntax Notation One (ASN.1)*".

11) Subclause A.3

Replace the production for **SpecificErrorInfo** *with the following ASN.1 production:*

```
SpecificErrorInfo ::= SEQUENCE {
    errorId         CMIP-SPECIFICERROR.&id ({SpecificErrorSet}),
    errorInfo       CMIP-SPECIFICERROR.&Value ({SpecificErrorSet} {@.errorId}) }
```

12) Subclause B.6.1

Replace the following:

Any

ASN.1 allows a special type ANY which can contain any other ASN.1 type at all. Such a type is not allowed within Z and it would be difficult to extend it to include one. However given any known set of types, it is possible to define a Z free type which can include any of those other types. An alternative strategy is to define ANY as a given set for typechecking purposes. This is satisfactory as long as nothing else is done with it. The type *AttributeValues* usually replaces *ANY*. This is defined below.

with:

Open Types

ASN.1 allows open types which can contain any other ASN.1 type at all. Such a type is not allowed within Z and it would be difficult to extend Z to include open types. However, given any known set of types, it is possible to define a Z free type which can include any of those other types. An alternative strategy is to define open type as a given set for typechecking purposes. This is satisfactory as long as nothing else is done with it. The type *AttributeValues* usually replaces open type. This is defined below.

13) Subclause B.6.5

Replace:

As mentioned above, it is difficult to model ASN.1 type ANY in Z.

with:

As mentioned above, it is difficult to model ASN.1 open types in Z.

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