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

AMENDMENT 2: Alignment with changes made to ITU-T Rec. X.660|ISO/IEC 9834-1 for identifiers in object identifier value notation

Technologies de l'information — Notation de syntaxe abstraite numéro un (ASN.1): Spécification de la notation de base

AMENDEMENT 2: Alignement sur les changements faits à la Rec. UIT-T X.660|ISO/CEI 9834-1 pour les identificateurs dans la notation de valeur d'identificateur d'objet

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Amendment 2 to ISO/IEC 8824-1:2002 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 Amendment 2 to ITU-T Rec. X.680.

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INTERNATIONAL STANDARD
ITU-T RECOMMENDATION

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

Amendment 2

Alignment with changes made to ITU-T Rec. X.660 | ISO/IEC 9834-1 for identifiers in object identifier value notation

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

1 Subclauses 31.7 and 31.9

In ITU-T Rec. X.680 | ISO/IEC 8824-1, replace 31.7 and 31.9 (Object Identifier) with:

31.7 The "NameForm" shall be used only for those object identifier components whose numeric value and identifier are specified in ITU-T Rec. X.660 | ISO/IEC 9834-1, Annex~~es~~ A ~~to C~~ (see also Annex D of this Recommendation | International Standard), and shall be one of the identifiers specified in ITU-T Rec. X.660 | ISO/IEC 9834-1, Annexes A to C.

NOTE – Where the "NameForm" is allowed, the use of the "NameAndNumberForm" instead has been recommended in some circumstances by ITU-T Rec. X.660 | ISO/IEC 9834-1, A.1.2.

31.7 bis Where ITU-T Rec. X.660 | ISO/IEC 9834-1 specifies synonymous identifiers, ~~any~~ synonyms may be used under conditions established when the synonym was registered in accordance with ITU-T Rec. X.660 | ISO/IEC 9834-1~~with the same semantics~~. Where the same name is both an identifier specified in ITU-T Rec. X.660 | ISO/IEC 9834-1 and an ASN.1 value reference within the module containing the "NameForm", the name within the object identifier value shall be treated as an ITU-T Rec. X.660 | ISO/IEC 9834-1 identifier.

31.9 ~~The "identifier" in the "NameAndNumberForm" and "XMLNameAndNumberForm" shall be specified when a numeric value is assigned to the object identifier component.~~ There is flexibility in the "identifier"s that can be used in the "NameAndNumberForm" and "XMLNameAndNumberForm" beneath the three top-level arcs. These identifiers are not included in encodings, and may change over time. This is in recognition that the names of organizations can change. Identifiers for arcs should normally be agreed between the Registration Authority responsible for the node above an arc, and the Registration Authority to which responsibility for subsequent arcs has been assigned.

NOTE – The Registration A~~a~~uthorities ~~allocating numeric values to object identifier components~~responsible for arcs beneath the three top-level arcs are identified in ITU-T Rec. X.660 | ISO/IEC 9834-1.

2 Subclauses D.1 to D.4

In ITU-T Rec. X.680 | ISO/IEC 8824-1, replace D.1 to D.4 with:

D.1 ~~Root~~Top-level assignment of object identifier component values

D.1.1 There are three top-level arcs~~Three arcs are specified from the root node~~. The assignment of values and identifiers, and the authority for assignment of subsequent component values, are as follows:

Value	*Identifier*	*Authority for subsequent assignments*
0	**itu-t**	Administered by ITU-T (See D.2)
1	**iso**	Administered by ISO (See D.3)
2	**joint-iso-itu-t**	Jointly-administered by ISO and ITU-T (See D.4)

D.1.2 The identifiers **itu-t**, **iso** and **joint-iso-itu-t**, assigned above, may each be used as a "NameForm" (see 31.3).

NOTE – An additional identifier **itu-r** has been allocated to this arc, for use (only) when the subordinate arc **r-recommendation(5)** is used, but it cannot be used as a "NameForm".

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D.1.3 The identifiers **ccitt** and **joint-iso-ccitt** are synonyms for **itu-t** and **joint-iso-itu-t**, respectively, and thus may appear in object identifier values.

D.2 ITU-T-administered assignment of object identifier component values

D.2.1 Six arcs are specified from the node identified by **itu-t**. The assignment of values and identifiers is:

Value	*Identifier*	*Authority for subsequent assignments*
0	**recommendation**	See D.2.2
1	**question**	See D.2.3
2	**administration**	See D.2.4
3	**network-operator**	See D.2.5
4	**identified-organization**	See D.2.6
5	**r-recommendation**	See D.2.7

~~These~~The first five identifiers may be used as a "NameForm" (see 31.3), but not **r-recommendation**.

NOTE – This is because only identifiers that were present in the initial version of this Recommendation | International Standard can be used as a "NameForm", in order to avoid backwards compatibility problems for related software.

D.2.2 The arcs below **recommendation** have the value **1** to **26** with assigned identifiers of **a** to **z**. Arcs below these have the numbers of ITU-T (and CCITT) Recommendations in the series identified by the letter. Arcs below this are determined as necessary by the ITU-T (and CCITT) Recommendations. The identifiers **a** to **z** may be used as a "NameForm".

D.2.3 The arcs below **question** have values corresponding to ITU-T Study Groups, qualified by the study period. The value is computed by the formula:

study group number + (period * 32)

where "period" has the value 0 for 1984-1988, 1 for 1988-1992, etc., and the multiplier is 32 decimal.

The arcs below each study group have the values corresponding to the questions assigned to that study group. Arcs below this are determined as necessary by the group (e.g., working party or special rapporteur group) assigned to study the question.

D.2.4 The arcs below **administration** have the values of ITU-T Rec. X.121 DCCs. Arcs below this are determined as necessary by the Administration of the country identified by the ITU-T Rec. X.121 DCC.

D.2.5 The arcs below **network-operator** have the value of ITU-T Rec. X.121 DNICs. Arcs below this are determined as necessary by the Administration or ROA identified by the DNIC.

D.2.6 The arcs below **identified-organization** are assigned values by the ITU Telecommunication Standardization Bureau (TSB). Arcs below this are determined as necessary by the identified organizations.

NOTE – Organizations which may find this arc useful include:

- recognized operating agencies not operating a public data network;
- scientific and industrial organizations;
- regional standards organizations; and
- multi-national organizations.

D.2.7 The arcs below **r-recommendation** are determined by the ITU Radiocommunication Bureau (BR).

D.3 ISO-administered assignment of object identifier component values

D.3.1 ~~Three~~Four arcs are specified from the node identified **iso(1)**. The assignment of values and identifiers is:

Value	*Identifier*	*Authority for subsequent assignments*
0	**standard**	See D.3.2
1	**registration-authority**	See D.3.3
2	**member-body**	See ~~D.3.3~~D.3.4
3	**identified-organization**	See ~~D.3.4~~D.3.5

These identifiers may be used as a "NameForm".

~~NOTE – The use of arc **registration-authority(1)** has been withdrawn.~~

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D.3.2 The arcs below **`standard`** shall each have the value of the number of an International Standard published by ISO or IEC. Where the International Standard is multi-part, there shall be an additional arc for the part number, unless this is specifically excluded in the text of the International Standard. Further arcs shall have values as defined in that International Standard.

D.3.3 The arcs below **`registration-authority`** are assigned to those International Standards that, in one or more of their parts, specify the procedures for the operation of a registration authority. Arc numbers from 1 to 10 are reserved to identify a part of the ISO/IEC 9834 multi-part Standard, and the primary integer value of the arc is the number of that part. For other International Standards, the arc number is the number of the International Standard. In all cases, the identified International Standard or part of the ISO/IEC 9834 multi-part Standard allocates subsequent arcs.

D.3.~~3~~4 The arcs immediately below **`member-body`** shall have values of a three digit numeric country code (without the leading zeros), as specified in ISO 3166, that identifies the ISO National Body in that country. The "NameForm" of object identifier component is not permitted for these arcs ~~with these identifiers~~. Arcs below the "country code" are allocated by the identified ISO National Body.

D.3.4~~5~~ The arcs immediately below **`identified-organization`** shall have values of an International Code Designator (ICD) allocated by the Registration Authority for ISO/IEC 6523 that identify an issuing organization specifically registered by that authority as allocating object identifier components. The arcs immediately below the ICD shall have values of an "organization code" allocated by the issuing organization in accordance with ISO/IEC 6523.

D.4 ~~Joint a~~Assignment of object identifier component values jointly administered by ISO and ITU-T

D.4.1 The arcs below **`joint-iso-itu-t`** have values which are assigned and agreed from time to time by a Registration Authority established by ISO/IEC and ITU-T to identify either areas of joint ISO/IEC | ITU-T standardization activity, or to provide allocations to other international organizations requiring object identifier namespace, in accordance with ITU-T Rec. X.662 | ISO/IEC 9834-3.

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