

Recommendation ITU-T A.1500 (fictitious)

(02/2016)

Author's guide for drafting ITU-T Recommendations

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Summary

This author's guide for drafting ITU-T Recommendations permits uniform, efficient preparation of texts by TSB for publication. It covers the rules for drafting a Recommendation in a standard manner. Its provisions should be applied in all instances where texts (such as draft Recommendations) are being prepared by study group authors for approval and publication. The methods presented in this author's guide are the basis for a template and will remain stable until changes to current publication procedures necessitate their modification.

In order to facilitate comparison with other presentation styles, this author's guide has been prepared in accordance with the presentation rules that it mandates. The examples used within the text, such as references, are for illustrative purposes only. Thus, this author's guide constitutes an example of the proposed presentation style. Please note that Recommendation ITU-T A.1500 is a fictitious Recommendation used to illustrate the points given in this guide.

History

TSAG agreed at its February 2011 meeting to update the author's guide (last revised 14 March 2007) based upon [C41](#) and the related discussion of that meeting. The convener of the ad hoc group on working methods, together with TSB, was tasked with preparing a final text. That text appears on subsequent pages.

Subsequently, TSAG agreed at its February 2016 meeting to make mandatory the Keywords field based on [TD405](#). The required changes have been introduced in this guide in clean text.

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/>.

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Recommendation ITU-T A.1500 (fictitious)

Author's guide for drafting ITU-T Recommendations

1. Scope

NOTE – Recommendation ITU-T A.1500 is a fictitious Recommendation. It was established for illustrative purposes only and constitutes an example of the proposed presentation style.

This author's guide is intended to provide a common approach to the preparation of ITU-T texts that are intended for publication, e.g., draft Recommendations. It attempts to cover the kind of questions likely to arise in the preparation of an ITU-T Recommendation and provides, through application of its own rules, an illustration using the normal order of the elements of drafting a typical Recommendation. To avoid confusion which may result from this approach for a first-time reader, detailed explanations of the contents of each heading are given in [clause 7](#) and [clause 8](#) below.

[Table 1](#) shows the arrangement of the elements that may comprise a published Recommendation. Shaded rows correspond to elements provided by TSB.

For common texts developed with ISO/IEC, [\[ITU-T A.23 \(03/1993\)\]](#) applies instead of this author's guide.

2. References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T A.23 (03/1993)] Recommendation ITU-T A.23 (03/1993), *Recommendation ITU-T A.23, Annex A (2014), Guide for ITU-T and ISO/IEC JTC 1 cooperation..*

[ITU-T A.5 (03/2022)] Recommendation ITU-T A.5 (03/2022), *Recommendation ITU-T A.5 (2016), Generic procedures for including references to documents of other organizations in ITU-T Recommendations..*

3. Definitions

3.1. Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1. amendment: [\[b-ITU-T A.1\]](#): An amendment to a Recommendation contains changes or additions to an already published ITU-T Recommendation. The amendment is published by ITU-T as a separate document that contains primarily changes or additions¹. If it forms an integral part of the Recommendation, approval of an amendment follows the same approval procedures as Recommendations; otherwise, it is agreed by the study group.

¹ An amendment should have a title that reflects its content.

Table 1 — Arrangement of elements (typical)

Element	Clause number
Introductory material^{a)}	
Cover page	None ^{b)}
Summary	None
History	None ^{b)}
Keywords	None
Foreword	None ^{b)}
Table of Contents	None ^{b)}
Introduction (optional)	None
Recommendation core material	
Title	None
Scope	1
References	2 ^{c)}
Definitions	3 ^{c)}
Abbreviations and acronyms	4 ^{c)}
Conventions	5 ^{c)}
Text of the Recommendation	6 onwards ^{c)}
Annexes (form an integral part of the Recommendation)	A onwards
Appendices (do not form an integral part of the Recommendation)	I onwards
Electronic attachment	_d)
Bibliography	None
Index (optional and rarely used)	None
a) These elements are not considered to be parts of the Recommendation. b) These elements are provided by TSB. c) When empty, the clause is maintained with an appropriate indication, e.g., "This clause is intentionally left blank.", or "None." d) An electronic attachment may correspond to a clause, an annex, an appendix or may be a non-numbered item.	

3.1.2. annex: [\[b-ITU-T A.1\]](#): An annex to a Recommendation contains material (e.g., technical detail or explanation) which is necessary to its overall completeness and comprehensibility and is therefore considered an integral part of the Recommendation. As an integral part of the Recommendation, approval of an annex follows the same approval procedures as Recommendations.

3.1.3. appendix: [\[b-ITU-T A.1\]](#): An appendix to a Recommendation contains material which is supplementary to and associated with the subject matter of the Recommendation but is not essential to its completeness or comprehensibility. It is therefore not considered to be an integral part of the Recommendation and thus does not require the same approval procedures as Recommendations; agreement by the study group is sufficient.

3.1.4. clause: [\[b-ITU-T A.1\]](#): The word clause shall be used to denote single-digit or multiple-digit numbered text passages.

3.1.5. corrigendum: [\[b-ITU-T A.1\]](#): A corrigendum to a Recommendation contains corrections to an already published ITU-T Recommendation. A corrigendum is published by ITU-T as a separate document that contains only corrections. TSB may correct obvious errors by issuing a corrigendum with the concurrence of the study group chairman; otherwise, approval of a corrigendum follows the same approval procedures as Recommendations.

3.1.6. implementers' guide: [\[b-ITU-T A.1\]](#): An implementers' guide is a document which records all identified defects (e.g., typographical errors, editorial errors, ambiguities, omissions or

inconsistencies and technical errors) associated with a Recommendation or a set of Recommendations and their status of correction, from their identification to final resolution. An implementers' guide is issued by ITU-T following agreement by a study group, or following agreement by a working party with concurrence of the study group chairman. Typically, defect corrections are first collected in an implementers' guide and, at a time deemed appropriate by the study group, they are used to produce a corrigendum or are included as revisions to a Recommendation.

3.2. Terms defined in this recommendation

This Recommendation defines the following terms:

3.2.1. normative reference: Another document that contains provisions which, through reference to it, constitute provisions of the referring document.

NOTE 1 – Entries listed in the "References" element shall be for normative references that are referenced from within the main body, including annexes, of the Recommendation.

NOTE 2 – All non-normative references must appear as entries in the "Bibliography" element.

NOTE 3 – The sole reference to a normative reference should not be made from an appendix.

3.2.2. supplement: A supplement contains illustrative material, published in a separate document, which is supplementary to and associated with the subject matter of one or more Recommendations, but is not essential to their completeness, understandability or ability to be implemented, and is therefore not considered to be an integral part of any Recommendation(s). As such, a supplement does not require the same approval procedures as Recommendations; agreement by the study group is sufficient. For additional guidance regarding supplements, see [\[b-ITU-T A.13\]](#).

3.2.3. text: Text is the content of a document, in particular a Recommendation, and may include printed or coded text, or data (such as test images, graphics, software, etc.).

NOTE – The "text" of Recommendations is to be understood in a broad sense.

4. Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

CD-ROM	Compact Disk Read-Only Memory
DVD-ROM	Digital Versatile Disk Read-Only Memory
PICS	Protocol Implementation Conformance Statement

5. Conventions

None.

6. Recommendation number and title

Recommendations are identified by their number, date of approval and title.

6.1. Recommendation number

Each ITU-T Recommendation is identified by a unique Recommendation number. This number is composed of a letter prefix referring to the series, and a number identifying the particular subject in the series. If necessary, this main number may be followed by a suffix number (e.g., Recommendation ITU-T G.108.2). In some exceptional circumstances, a dual number may be considered for a Recommendation when it belongs to more than one series, (e.g., Recommendation ITU-T G.709/Y.1331).

Recommendation numbers are chosen in consultation with the study group chairman and study group counsellor.

6.2. Date of approval

Recommendation editions are identified by their date of approval. This is normally the year of approval, but may be indicated as month and year, if necessary, to uniquely identify the version of the Recommendation.

6.3. Recommendation title

The title should not be unnecessarily long and should provide an indication of the main topics covered. The title should be unique, and should not contain acronyms. It should not repeat the series and sub-series titles which are already indicated on the Recommendation cover page.

7. Description of introductory material to be provided by the author

Introductory material is not considered as part of the Recommendation. Consequently, it shall not contain any normative requirements. Pages containing introductory material shall be numbered with lower case Roman numerals in the final publication.

7.1. Summary (mandatory)

This element shall be supplied by the rapporteur or the editor. It is placed before the main body of the Recommendation. It provides a brief overview of the purpose and contents of the Recommendation, thus permitting readers to judge its usefulness for their work.

7.2. Keywords (mandatory)

This element, placed before the main body of the Recommendation, lists a limited number of words or word combinations that identify the main topics in the Recommendation. Keywords shall be placed successively in alphabetical order separated by commas.

7.3. Introduction (optional)

This element, placed before the main body of the Recommendation, may provide information that the author deems appropriate and that is not already provided in the "Summary" or in the "Scope" elements.

8. Description of core material

The Recommendation commences on Arabic numeral page 1 that follows the Roman-numbered pages in the final publication. The Recommendation title will appear at the beginning of page 1, just preceding clause 1, "Scope".

8.1. Scope

This element should appear, as clause 1, at the beginning of every Recommendation, to define, without ambiguity, its intent or object and the aspects covered, thereby indicating the limits of its applicability.

8.2. References

This element should appear as clause 2, and permits the author to list, alphanumerically in ascending order, ITU-T and ITU-R Recommendations, International Organization for Standardization (ISO), International Electrotechnical Commission (IEC) and other accepted organizations' standards referred to in the main body of the Recommendation and which are considered to be incorporated by reference

into the Recommendation. [\[ITU-T A.5 \(03/2022\)\]](#) provides generic procedures for referencing the documents of organizations other than ISO and IEC in ITU-T Recommendations.

The "References" element shall be introduced by the following boilerplate paragraph:

"The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation."

ITU-T and ITU-R Recommendations will be identified by "Recommendation ITU-T" or "Recommendation ITU-R" followed by the Recommendation number and then by the year of approval between parentheses (e.g., "Recommendation ITU-T A.5 (2016)") in clause 2. They will be followed by the full title of the Recommendation.

Each referenced document shall be introduced in clause 2 with a citation tag so that subsequent references to these texts in the remainder of the Recommendation can use the citation tag, e.g., [\[ITU-T A.5 \(03/2022\)\]](#).

NOTE – The citation tag in square brackets is generally the short form or abbreviation indicating the standards group that produced the document, followed by the number or designation of the document itself.

Informative (non-normative) reference to any other publicly available texts may be made through a bibliography, at the end of the Recommendation (see [clause 8.10](#)). Informative references provide supplemental information to assist the understanding of the Recommendation and to which conformance is not necessary. If the reader does not need to read the referenced document to obtain information that is not explicitly stated in the referencing Recommendation, then the referenced document is informative.

[Example](#) illustrates examples of presentation of references.

EXAMPLE — Example of presentation of references

Dual-numbered Recommendation:

[ITU-T G.707] Recommendation ITU-T G.707/Y.1322 (2007), *Network node interface for the synchronous digital hierarchy (SDH)*.

Identical Recommendation | International Standard (or "common text"):

[ITU-T H.222.0] Recommendation ITU-T H.222.0 (2006) | ISO/IEC 13818-1:2007, *Information technology – Generic coding of moving pictures and associated audio information: Systems*.

Paired Recommendation | International Standard (or "twin text"):

[ITU-T T.50] Recommendation ITU-T T.50 (1992), *International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) – Information technology – 7-bit coded character set for information interchange*.

Series or sub-series of Recommendations:

[ITU-T M.3016.x] Recommendation ITU-T M.3016.x-series (2005), *Security for the management plane*.

[ITU-T Q.4xx] Recommendations ITU-T Q.4xx-series (1988), *Specifications of Signalling System R2*.

Recommendation ITU-T Q.816 (2001) plus all amendments and corrigenda that apply to that base:

[ITU-T Q.816] Recommendation ITU-T Q.816 (2001), *CORBA-based TMN services*.

SDOs:

[ETSI ETS 300 724] ETSI ETS 300 724 ed. 1 (1997), *Digital cellular telecommunications system; ANSI-C code for the GSM Enhanced Full Rate (EFR) speech codec (GSM 06.53)*.

[IEC 61883-4] IEC 61883-4 (2004), *Consumer audio/video equipment – Digital interface – Part 4: MPEG2-TS data transmission*.

[IETF RFC 1042] IETF RFC 1042 (1988), *Standard for the transmission of IP datagrams over IEEE 802 networks*.

8.3. Definitions

This element should appear as clause 3; it gives the definitions necessary for the understanding of certain terms used in the Recommendation. For more details, see [Annex B](#).

The following statements are used to introduce terms, grouped according to where they are defined under the following boilerplate sentences:

For clause 3.1: "This Recommendation uses the following terms defined elsewhere:".

For clause 3.2: "This Recommendation defines the following terms:".

In order to associate defined terms in the different language versions of the Recommendation, it is useful to give a clause number to each term.

NOTE 1 – Terms which are defined elsewhere should normally include only a normative reference to the defining document to avoid difficulty in keeping multiple copies of a definition aligned. In exceptional circumstances, a definition for a term defined elsewhere may be quoted with an informative reference to the source document in order to allow for a stand-alone document.

NOTE 2 – TSB collects all new terms and their definitions from new or revised Recommendations and adds them to the ITU-T Terms and Definitions database, which is available to the general public on the ITU-T website (<http://www.itu.int/ITU-R/go/terminology-database>).

8.4. Abbreviations and acronyms

This element should appear as clause 4. It lists in alphabetical order all the abbreviations and acronyms from throughout the Recommendation with their unabbreviated forms. The letters which appear in the acronym shall be capitalized. The first appearance of any acronym within the Recommendation should be preceded by its complete unabbreviated form, e.g., asynchronous transfer mode (ATM). It is recommended to use abbreviations in figures and tables, due to lack of space. The plural of a fully capitalized acronym is formed by adding a lower case "s", e.g., ICTs (not ICTS).

Clause 4 shall start with the following text: "This Recommendation uses the following abbreviations and acronyms:".

NOTE 1 – Abbreviations for physical quantities, measurement units and their multiples from the International System of Units (SI) (e.g., kHz) do not need to be listed, as they are well known.

NOTE 2 – Names of ITU and other major international standards development organizations do not need to be included in clause 4, "Abbreviations". Less familiar [\[ITU-T A.5 \(03/2022\)\]](#) or [\[b-ITU-T A.6\]](#) qualified organizations may be listed, where appropriate.

8.5. Conventions

This element should appear as clause 5. It describes particular notations, assumptions, styles, presentations, etc., used within the Recommendation, if any.

The unnecessary use of capitalized words shall be avoided. Special classes of terms or other texts that are to be capitalized throughout the Recommendation shall be listed in the "Conventions" clause.

An ITU-T Recommendation, by definition, is not mandatory – compliance is voluntary. The use of the words "shall" and "must" and their negatives "shall not" and "must not" are to be used with care and sparingly. These words are only to be used to express mandatory provisions, when necessary, to give the Recommendation meaning and effect; i.e., if certain values and/or parts of a Recommendation are essential and the Recommendation will have no meaning if these values and/or parts are not strictly respected or adhered to. Compliance with the Recommendation is achieved only when all mandatory provisions are met. However, the inclusion of mandatory provisions in a Recommendation does not imply that compliance with the Recommendation is required of any party.

8.6. Recommendation technical content

Recommendation clauses 6 and onwards contain technical specifications.

NOTE – Non-normative material should be placed in an appendix.

8.7. Annexes

Annexes form an integral part of the Recommendation and shall appear immediately after the main body of the Recommendation. They shall be designated A, B, C, etc. A single annex shall be designated Annex A. The following text should appear immediately after and below the annex title: "(This annex forms an integral part of this Recommendation.)".

Numbers given to the clauses, tables, figures and equations of an annex shall be preceded by the letter assigned to that annex (e.g., clause A.2, Figure B.3, Equation C-1). The numbering shall start afresh with each annex.

8.8. Appendices

Appendices do not form an integral part of the Recommendation and shall appear immediately after the last annex of the Recommendation or, if there are no annexes, after the main body of the Recommendation. They shall be designated with upper case Roman numerals (i.e., I, II, III). A single appendix shall be designated Appendix I. The following text should appear immediately after and below the appendix title: "(This appendix does not form an integral part of this Recommendation.)".

Numbers given to the clauses, tables, figures and equations of an appendix shall be preceded by the numeral assigned to that appendix (e.g., clause II.3, Table IV.2, Equation III-1). The numbering shall start afresh with each appendix.

8.9. Electronic attachments

An electronic attachment contains information that is disclosed only in electronic format, such as source code software, test data, formal-language descriptions, software user guides or pro forma to be completed by the users (PICS, etc.). They are recorded on an appropriate electronic physical medium (CD-ROM, DVD-ROM, etc.) attached to the cover for paper publication, and are grouped with the main text file for web publication.

Electronic attachments may be normative or informative, and may correspond to a clause, an annex, an appendix or may be an unnumbered item.

If the electronic attachment or any other part of a Recommendation is covered by a copyright or a patent, the intellectual property rights owner must file with TSB a TSB-standardized software copyright and licensing declaration form or a patent statement licensing declaration form. More information on this topic can be found at: <http://www.itu.int/en/ITU-T/ipr/Pages/default.aspx>.

8.10. Bibliography

This element may be present in order to cite references or sources not covered by the "References" element and which are intended for background information (i.e., they are informative not normative). Referencing draft standards and internal ITU documents (e.g., TDs or contributions) and other documents that are not available to all readers of the published Recommendation shall be avoided.

If these documents are referenced, a format similar to that used in clause 2 should be used, with a slight difference in the formulation of the citation tag ("b-" is inserted at the start of the tag). [Example in clause 8.11](#) provides examples of bibliographic entries.

8.11. Index

This element, when needed, should be the last element of the Recommendation. It is preferable to reference the index entries to the clause number (and not to the page number) since page numbering is subject to change during processing in TSB.

EXAMPLE — Example of presentation of bibliographic entries

Supplements:

[ITU-T G Suppl. 41] ITU-T G-series Recommendations – Supplement 41 (2010), *Design guidelines for optical fibre submarine cable systems*.

Book:

[b-Trischitta] Trischitta, P.R., and Varma, E.L. (1989), *Jitter in Digital Transmission Systems*, Norwood, MA, Artech House.

Article in journal:

[b-Cornaglia] Cornaglia, B., Pane, P., and Spini, M. (1995), *Errored Block Detection with Bit Interleaved Parity Failures in SDH Network*, IEEE Transactions on Communications, Vol. 43, No. 12, December, pp. 2904-2906.

Web-only document:

[b-W3C HTML 4.01] *W3C, HTML 4.01 Specification*, W3C Recommendation 24 December 1999.
<http://www.w3.org/TR/1999/REC-html401-19991224/>

9. Formatting indications

9.1. General

Due to the multiple compatibility problems and the resulting risks of misinterpretation of objects such as equations or figures during the different processing stages, authors should send, when requested by TSB, a stable electronic copy (e.g., a pdf file) that shows the intended layout of figures and equations.

The original publication of this author's guide occurred prior to the creation of the standard template².] for use in the preparation of ITU-T texts in Microsoft Word. By using the correct template and applying the appropriate "style" to the text, the author avoids the need to know the details of the formatting associated with font sizes and types, indentation, inter-line spacing, etc. Those styles have been used within this author's guide. Although the template saves the author from the need to know these details, they have been maintained in the guide.

Deviations from the styles presented in the standard template should be avoided. In exceptional cases wherein the author requires the use of additional styles, this need shall be indicated explicitly when submitting the text to TSB.

Paragraphs of the normal text should start at the left margin.

9.2. Fonts

In general, all Recommendations should use a serif font (e.g., "Times New Roman") with the point size set at 12. Where required, a sans serif font (e.g., "Arial"), a constant width font (e.g., "Courier New"), and a standard mathematical symbol font may also be used. The recommended font is 8pt "Arial" for indicating URIs within the text. The recommended font is 9pt "Courier New" for ASN.1 modules and types, as well as for XML documents and schemas. Unless there are extenuating circumstances, no other special fonts should be used. (As a reminder, using the appropriate template for the particular type of document automatically implements all the special formatting if one selects the correct style for the elements within the document.)

If circumstances require special characters beyond these font families, the font should be embedded in the saved electronic file to allow for correct text rendering. In general, natural language descriptions should use a serif font, while formal or programming language elements should use a constant width font.

The unnecessary use of italic and bold typeface within the text should be avoided.

9.3. Clause numbers and titles

9.3.1. Clause numbers

Clauses should be numbered with the digits in bold and separated by periods (e.g., **8.3.1**). In the case of a single-numbered clause, no period shall be present.

The clause number shall appear together with the clause title on a separate line.

9.3.2. Clause titles

The title, in bold, indicating the content of the clause shall appear to the right of the clause number. Untitled clauses should be avoided.

9.3.3. Lists

Lists allow associated short clauses to be presented outside of the main paragraph numbering scheme thus avoiding excessively long clause numbers (e.g., 2.13.3.3.2 is equivalent to point two of the third indent of clause 2.13.3). In the interest of simplicity, authors should avoid lists with more than three levels.

One-level-only lists may be separated with dashes, bullets or numbers:

- first item;
- second item;

² Templates can be found at: <http://www.itu.int/ITU-T/studygroups/templates/index.html>

– etc.

When sub-lists appear within a list as a second level, main levels, at least, should be numbered:

- a) first item:
 - 1) first sub-item;
 - 2) second sub-item.
- b) second item:
 - 1) first sub-item;
 - 2) second sub-item.

9.4. Mathematical expressions and symbols (formulae, equations, etc.)

9.4.1. Quantities, units and symbols

Physical quantities, units, symbol names and usage shall follow the International System of Units (SI), as defined by ISO. Letter symbols used to express quantities in an expression shall be listed with their explanations below the expression, or group of expressions, using them.

9.4.2. Equations and formulae

Equations and formulae shall be in the mathematically correct form and shall occupy one or more lines with no text, unless text is an integral part of the expression. ITU formats all equations and formulae by means of MathType; to avoid transcription errors within ITU during publication, the use of this tool by the authors is encouraged.

When necessary, equations should be given a number (placed between parentheses at the right margin of the page) that contains the main clause number plus a number in Arabic numerals in sequence from the beginning of this clause. For example, Equation 6-3 is the third mathematical expression in clause 6 of the Recommendation in which it is contained. Given the complicated nature of mathematical expressions, great care shall be exercised to ensure the clarity of manuscripts (e.g., for the vertical placement of subscripted or superscripted numbers or variables).

9.4.3. Numbers and special characters

In order to avoid ambiguity, it is recommended to use a single quote (') as a thousand's digit separator instead of spaces, commas or dots (e.g., "1'000'000").

Arabic numerals and non-Latin characters (e.g., Greek, Cyrillic) should not be in italic typeface.

9.5. Figures and tables

Each figure and table shall be referred to explicitly within the text.

9.5.1. Figures

Figures shall be numbered with Arabic numerals, beginning with 1 (within annexes or appendices, there will be a letter-plus-period or a Roman-numeral-plus-period prefix). This numbering shall normally be independent from the numbering of the clause and of any tables. For Recommendations which are very long or complex, however, the author may number figures sequentially with respect to the single digit clause number. For example, Figure 4-3 denotes the third figure in clause 4 of the Recommendation in which it is contained.

The number and title shall be placed on the same line and centred, below the figure. The first letter of the title shall be capitalized; all other words shall not be capitalized unless they are special terms that are capitalized throughout the Recommendation in accordance with the conventions given.

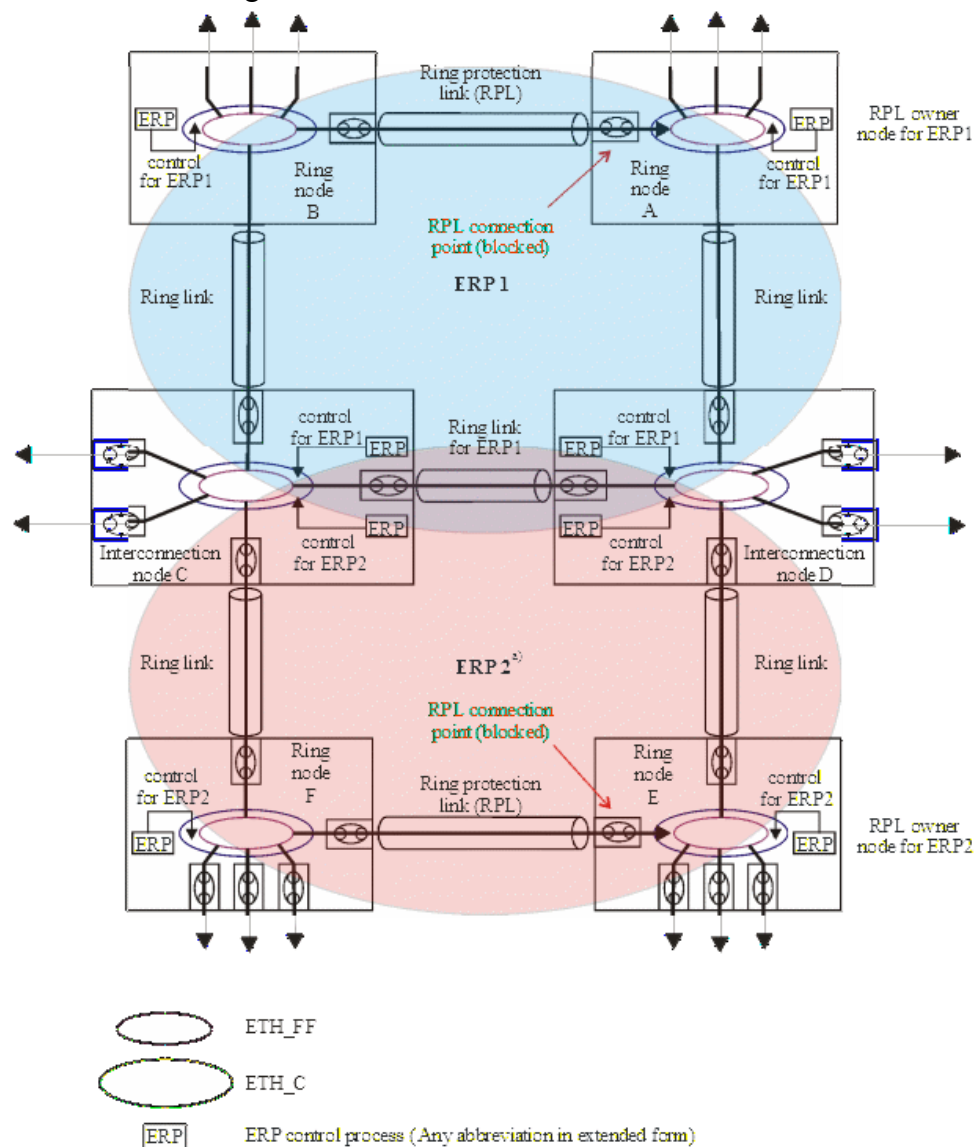
When a figure is in 2 parts (e.g., Figure 6, part a and part b), refer to these parts in the text as follows: Figure 6-a, Figure 6-b. They may be referred to collectively as Figure 6.

Figures and references to figures should generally be legible and understandable when using greyscale printing. It is helpful to remember that rich colours visible on computer monitors do not appear the same on paper and in the case of greyscale printing they often appear as black. To assure legibility, ITU-T uses 9pt Times New Roman font for text within figures.

If there are too many objects on a figure, it is preferable to break the figure into several parts.

To facilitate the editing process of figures, authors are encouraged to submit additionally an editable source file for the figures in their original format (CorelDraw, Microsoft Visio, Microsoft PowerPoint, Micrografx Designer, etc.) when submitting the final text.

It is recommended that the figure index that is shown in the lower right-hand corner of the figure be preserved if a figure previously published by ITU has formed the basis of the new or modified figure. This index allows TSB to locate the source, which can reduce the time to publication by allowing the reuse of the foundation drawing.



^{a)} Explanatory comments are placed immediately below the figure.

NOTE 1 – General notes to the figures are placed above the number and title of the figure.

NOTE 2 – Successive notes are numbered consecutively.

Author_Guide(11)_P3

Figure 1 — Example of presentation of figures

9.5.2. Tables

Tables shall be numbered with Arabic numerals, beginning with 1 (within annexes or appendices there will be a letter-plus-period or a Roman-numeral-plus-period prefix). This numbering shall normally be independent of the numbering of the clause and of any figures. For Recommendations which are very long and complex, the author may number sequentially with respect to the single digit clause number. For example, Table 4-3 denotes the third table in clause 4 of the Recommendation in which it is contained.

The number and title shall be placed on the same line and centred, above the table. The first letter of the title shall be capitalized; all other words shall not be capitalized unless they are special terms that are capitalized throughout the Recommendation in accordance with the conventions given.

The heading of each column shall be bold-faced and centred, and its first letter shall be capitalized.

If the table is longer than a page length, the table number and title as well as column headings shall be repeated on each page.

If the table is wider than a page width, then each row in the complete table shall be assigned an index number. Each sub-table shall contain the index number in the first column.

9.6. Notes and footnotes

9.6.1. Notes and footnotes to the main text

If the text is written in a clear manner, the need for notes should be minimal. If supplementary or complementary information is necessary, notes may be integrated in the text of a Recommendation. They shall normally be placed after the clause or paragraph to which they refer.

In a numbered clause containing only one note, the note shall start with the word "NOTE", placed at the beginning of the first line of the note and followed by a space and an "em" dash.

NOTE – This note is an example.

In a numbered clause containing two or more notes, each note shall be preceded by the word "NOTE", a space then an Arabic numeral, a space and an "em" dash at the beginning of its first line. Regardless of whether they occur singly or in one or more groups, all notes within the same numbered clause shall be numbered consecutively (i.e., NOTE 1 –, NOTE 2 –, NOTE 3 –, etc.).

Footnotes³ may be used to provide information regarding a particular item, word or concept. They shall be indicated by a superior positioned Arabic numeral at the appropriate location in the text and shall be numbered consecutively throughout the Recommendation. Both the indicator and the footnote itself shall be printed with a font one or two point sizes smaller than the main text.

If the same footnote appears repeatedly on the same page of the text, the text of the footnote should be removed after the first time it is used. Furthermore, the same identifier for the footnote should be used for each occurrence of reference to that note on the page. Should the same footnote appear multiple times across multiple pages, the same rules within each page apply as above; however, the footnote should appear with a (possibly) different identifier for the first occurrence on each page.

Notes and footnotes should not contain normative specifications.

9.6.2. Notes to tables and figures

Notes to tables and figures shall be treated independently from footnotes and notes integrated in the Recommendation. They shall be located for tables within the frame of the table, and for figures,

³ Footnote example.

between the figure and its title. Notes for each table and each figure shall be numbered independently. Such notes may contain normative specifications. Notes to a table or a figure can be indicated alternatively by a superscripted lower case letter (see [Figure 1](#)). Both the indicator and the note itself shall be printed in a font several point sizes smaller than the main text. To assure legibility, ITU-T uses 9pt Times New Roman font for text within figures and tables.

9.7. Citing of references

9.7.1. References within the same Recommendation

When reference is made to text passages, tables, figures, equations, etc., within the same Recommendation, it is sufficient to cite the appropriate number without the Recommendation number, e.g., "see Table 4", or "see clause 5" or "see clause 5.4.7".

9.7.2. References to parts of another Recommendation

When reference is made to text passages, tables, figures, equations, etc., in another Recommendation, the citation tag (see [clause 8.2](#)) of the referenced Recommendation should be included in the reference, e.g., "see Figure 1 of [b-ITU-T A.8]", "see clause 2 of [b-ITU-T A.4]" or "see clause 2.2.10 of [ITU-T A.5]".

9.8. Formal language descriptions

Formal language modules should be presented using only characters acceptable by the relevant compilers (including tabs, line returns, etc.). See [clause 9.2](#) regarding the use of fonts for formal languages.

10. Additional guidance

An ITU English language style guide [b-ITU style] is available.

When revising an approved ITU-T Recommendation, adequate indications should be given to identify the differences from the published version of the same text. Annex A provides additional details concerning adequate indications.

The identification of XML namespaces defined in ITU-T Recommendations requires a common approach for the URI naming scheme. This approach is described in Annex C.

As a quality assurance initiative, TSAG has identified the actions required to improve the quality of ITU-T Recommendations. These are indicated in Annex D, in which rapporteurs are identified as being responsible for ensuring that all of the points in the check list have been fulfilled adequately.

Editors and rapporteurs are invited to consider the application of the presentation style that is indicated in Annex E in the amendments and corrigenda submitted to ITU, in order to help determine the modifications and to facilitate the processing of texts by TSB.

Annex A

Revision to existing text

(This annex forms an integral part of this Recommendation.)

The following is based on clause I.2.7 of [\[b-ITU-T A.2\]](#):

When revising an ITU-T Recommendation, adequate indications should be given to identify any changes proposed with regard to the previous **published** version of the same text.

If a contribution proposes modifications to a non-published text, e.g., a draft Recommendation, the portions of the text to be modified should also be clearly shown with revision marks.

Such change indications could be made, for example, by strikethrough, underlining and by vertical revision bars (|) appearing at the margin of the page.

Authors are advised to ask TSB for the last published source file of the Recommendation to be amended or revised.

Annex B

Guidance on the development of definitions

(This annex forms an integral part of this Recommendation.)

B.1. Introduction

A considerable amount of time is spent by study groups on terminology and definitions but the results can be duplicative and of inconsistent quality. Greater consistency is needed in the way definitions are drafted. In addition, consideration needs to be given to ensuring that definitions are drafted in a way that allows for automated compilation and processing of new definitions so that the ITU database of definitions can be more easily maintained. Annex 2 to WTSA Resolution 67 (Johannesburg, 2008) provides basic guidelines for the preparation of terms and definitions. This annex builds on that guidance to help study groups to adopt a consistent approach to terminology and definitions and also to address the requirements for automated updating of the terminology database.

B.2. Terms and definitions

A *term* is simply a word, or group of words that is used to express a specific concept. A *definition* is a clear, concise and accurate statement that expresses the precise meaning of a term or concept.

B.3. Best practices for writing definitions within ITU-T Recommendations

B.3.1. Use of existing terminology

Developers of Recommendations spend a great amount of time on terminology development. While it is important that definitions accurately capture the subject concept or term, experience has shown that terminology discussions frequently consume significant technical meeting time. One way to reduce unnecessary discussion is to use already-defined terms.

New terms should not be developed where an acceptable definition already exists. Also, already-existing terms should not be redefined. Existing definitions should be consulted before any new definition is developed to check if the term/concept has already been defined. Only if no satisfactory definition exists should development of a new definition be considered. When defining a new term/concept, the name used for the term should not duplicate the name used for an already-defined term/concept.

ITU provides an online database, "ITU Terms and Definitions"⁴, to assist in discovering existing terms and definitions in ITU-R and ITU-T Recommendations.

B.3.2. Structure

A formal definition is a concise, logical statement that comprises three essential elements:

- a) The term (word or phrase) to be defined;
- b) The class of object or concept to which the term belongs; and
- c) The characteristics that distinguish it from all others of its class.

An example of a complete definition in ITU-T style is:

cryptographic algorithm:	a mathematical function	that computes a result from one or several input values.
---------------------------------	-------------------------	--

⁴ <http://www.itu.int/ITU-R/go/terminology-database>

(The term)	(The class of object)	(The distinguishing characteristics)
------------	-----------------------	--------------------------------------

B.3.3. Conciseness

Definitions should be concise and should include only the necessary information. To avoid complexity and confusion, each definition should describe only one concept.

Definitions should contain only information that makes the concept unique and should not contain detailed explanations or extraneous material. Any additional descriptive information or other supplementary (i.e., non-normative, non-essential) information that is necessary to differentiate the concept from other concepts may be included as notes, figures or equations.

Figures, equations and tables should not replace the verbal representation of the defined term but may form useful supplementary information.

NOTE – It is recognized that, for mathematical terms, equations may be the most effective and efficient way of defining the term.

B.3.4. Clarity and accuracy

Definitions must be accurate, clear and positive. Inaccurate and negative definitions are not acceptable. Nor should definitions be circular or include, or paraphrase, the term being defined. The language used in a definition must either be common English language terms or defined elsewhere in the text.

B.3.5. Independence

Definitions must be able to stand alone. In other words, the meaning should be understandable without requiring reference to other parts of the Recommendation. This is particularly important since the terms and definitions are being extracted for use by delegates, and consumers on the web.

B.3.6. Grammatical form

The form of the definition should also be the same part of speech⁵ as the term or concept being defined. For example, if the term being defined is a noun, the definition should not be expressed as a verb or other part of speech.

B.3.7. Illustrations within definitions

While figures or equations can assist with the understanding of the meaning of a term, they should not form the essence of the definition. In other words, they are best applied as supplemental, informative material to enhance the presentation of the concepts involved. In general, they should not replace the textual representation of the basic definition.

B.3.8. Symbols and abbreviations

Where abbreviations are used within a definition, an explanation or expansion of those abbreviations must be included. Standard symbols for measurement units should not be defined.

B.3.9. Protocol elements

Formal or detailed descriptions of protocol elements should be avoided within the "Definitions" clause; these are best handled within the main body of the Recommendation (clause 6 or later).

B.3.10. Variables and special notations catalogued within definitions

Definitions should be limited to concepts related to terms and not the method of representing information within a Recommendation. The latter group is more appropriately documented within clause 5, "Conventions".

⁵ "parts of speech" are *verbs, nouns, adjectives, adverbs, etc.*

B.3.11. Undefined terms

Where a term is used but not defined (either explicitly, or by reference), it must be assumed that common English language usage (i.e., the dictionary definition) of the term is intended. Recognized English language dictionaries include: *The Concise Oxford Dictionary*, *The Shorter Oxford English Dictionary*, *The Collins Concise English Dictionary*, *Webster's New World College Dictionary* or *Chambers Concise Dictionary*.

B.4. Formatting of definitions

Formatting requirements for definitions are illustrated in [clause 3](#) and explained in [clause 8.3](#) of this author's guide.

NOTE – The formatting requirements for definitions within common or twin texts jointly developed with ISO/IEC JTC 1 are illustrated in clause 3 of Appendix II of [\[ITU-T A.23 \(03/1993\)\]](#).

In addition, the following stylistic aspects are preferred:

- Each definition should begin with a clause number, placed at the margin with a tab between the number and the term. The term should be in bold, beginning with a lower case letter and followed by a colon. Definitions should end with a period.
- Definitions with more than one explanation should be separated with semicolons.
- Definitions should appear in alphabetical order.

Annex C

URI naming scheme for the identification of XML namespaces defined in ITU-T Recommendations

(This annex forms an integral part of this Recommendation.)

C.1. Introduction

ITU-T Recommendations increasingly define XML schemas. To answer the growing demand of universal resource identifiers (URIs) for referencing XML namespaces in ITU-T Recommendations, ITU reserved the following URL:

`http://www.itu.int/xml-namespace/`

This annex gives the rules for allocating URIs to XML namespaces defined in ITU-T Recommendations.

C.2. Proposed structure for URIs defined in ITU-T Recommendations

In order to guarantee the uniqueness of namespaces defined in ITU-T Recommendations as well as to improve their visibility, any XML namespace will be referenced with a URI of the form:

`http://www.itu.int/xml-namespace/itu-t/x.nnn.pp/name/`

where:

"x"	is the ITU-T Recommendation series letter, in lower case, of the referenced Recommendation, i.e., "a" to "z"
"nnn"	is the main number of the Recommendation
"pp"	is the sub-number, if any
"name"	is the namespace(s) defined in the Recommendation

The study group responsible for the Recommendation identified by the namespace, "`http://www.itu.int/xml-namespace/itu-t/x.nnn.pp/`", has the authority to allocate one or more subsequent arcs. Moreover, that study group has the authority to insert a subsequent arc to handle version numbers or approval dates, if there is a need to differentiate among editions of that Recommendation. Such allocations shall be published in the Recommendation making those allocations. All arcs shall preferably be written in lower case.

It is noted that this naming scheme can easily be extended to accommodate other types of documents produced in ITU.

C.3. Examples of use

- Recommendation ITU-T X.1206 (2008), *A vendor-neutral framework for automatic notification of security related information and dissemination of updates*.
`http://www.itu.int/xml-namespace/itu-t/x.1206/core/`
- Draft Recommendation ITU-T H.325, *Advanced multimedia systems for next generation and other packet-switched networks*.
`http://www.itu.int/xml-namespace/itu-t/h.325/core/`

Annex D

Actions required to improve the quality of ITU-T Recommendations

(This annex forms an integral part of this Recommendation.)

In an ITU-T meeting on a Question and before a draft Recommendation is proposed for approval, consent or determination, the rapporteur should ensure that all of the bullet points of the check list below have been reviewed and that they have been fulfilled adequately. This should also be reflected in the report of the Question.

NOTE – Additional guidance is provided in clause 5 of [\[b-ITU-T Rap\]](#).

The draft <title of the draft>, which is proposed for approval, consent or determination:

- has been thoroughly reviewed for technical accuracy;
- is technically sound with as few options as feasible;
- has content that does not conflict with the content of an already approved Recommendation;
- does not contain case studies within the normative part;
- has only short illustrative examples, if necessary, included in the normative part;
- follows the author's guidelines (including the use of ITU-T templates, which can be found at: <http://www.itu.int/ITU-T/studygroups/templates/index.html>)
- has been spell-checked and is grammatically correct, to the extent practicable;
- contains definitions that have been developed after consulting the ITU-T Terms and Definitions database⁴ and following the guidance of the standardization committee for vocabulary (SCV) (see [Annex B](#));
- has all acronyms, including those in the figures and tables, correctly spelled out;
- has the normative part making use of all references in clause 2 (References);
- has all references in clause 2 (References) qualified in accordance with [\[ITU-T A.5 \(03/2022\)\]](#).

Annex E

Presentation style of amendments and corrigenda

(This annex forms an integral part of this Recommendation.)

This annex describes a suggested presentation format for amendments and corrigenda. Editors and rapporteurs are invited to consider the application of the following presentation in the amendments and corrigenda submitted to ITU, in order to help determine the modifications and to facilitate the processing of texts by TSB.

This proposal applies to ITU-T texts only. The presentation of ITU-T | ISO/IEC common texts is governed by [\[ITU-T A.23 \(03/1993\)\]](#).

E.1. Preferred presentation format

The principle of the format is to present changes with revision marks and to replace unchanged text with ellipses, keeping only the necessary parts to help locate the modified parts.

The following fixed header is added in italics to the text:

Modifications introduced by this [amendment | corrigendum] are shown in revision marks. Unchanged text is replaced by ellipsis (...). Some parts of unchanged text (clause numbers, etc.) have been kept to locate the correct insertion points.

Unmodified text is replaced by ellipses. Parts of the text (clause titles, etc.) are kept to locate the modified parts. In case there is any doubt whether the deletion of a text part will still allow one to properly locate the modified part, the text part is kept.

The text appears, then, as shown in the example given in [Example](#).

EXAMPLE — Example application of the presentation format

...

6 Definition of the VBD mode of operation

...

and should consider the appropriate application of:

~~The use of echo cancellers on the VBD channel, as per Rec. ITU-T G.168.~~

Forward error correction (FEC) (e.g., per [IETF RFC 2733]) or other forms of redundancy (~~e.g., per [IETF RFC 2198]~~) only if support has been successfully negotiated with the remote ITU-T V.152 implementation.

...

E.2. Exceptions to the above presentation format

The above presentation format is intended to simplify presentation. It should not be considered as a constraint. Sometimes, other formats lead to simpler presentation, for instance, when deleting or adding complete annexes or appendices.

E.3. Numbering new clauses, tables and figures

In a corrigendum or an amendment, existing clause, figure and table numbers should not be modified, in order to allow for further non-ambiguous referencing, especially in future amendments and corrigenda to the same version of the Recommendation.

E.3.1. Deletion of a clause, table or figure

The subsequent clauses, tables or figures should not be renumbered, and the deleted number should not be reused.

E.3.2. Insertion of a clause, table or figure

Previous clause, figure or table numbers will be extended with letters in order to designate the inserted clauses, tables or figures.

Example: If several clauses are to be inserted, for instance, between clauses 6.1 and 6.2, they should be numbered as 6.1a, 6.1b, etc.

E.3.3. Renumbering

When issuing a completely revised edition, clauses, figures and tables will be renumbered sequentially.

Appendix I

Appendices

(This appendix does not form an integral part of this Recommendation.)

Appendices do not form an integral part of a Recommendation. It should be noted that while a bibliography is considered an appendix, and thus is non-normative, it is not explicitly labelled as an appendix. The text "(This appendix does not form an integral part of this Recommendation.)" does not follow the "Bibliography" heading.

The sole reference to a normative reference listed in clause 2 should not be made from an appendix. The sole reference to a non-normative reference such as [\[b-ITU-T K.35\]](#) may appear in an appendix.

Bibliography

- [b-ITU-T A.1] Recommendation ITU-T A.1 (10/2008), *Recommendation ITU-T A.1 (2012), Working methods for study groups of the ITU Telecommunication Standardization Sector..*
- [b-ITU-T A.13] Recommendation ITU-T A.13 (09/2019), *Recommendation ITU-T A.13 (2000), Supplements to ITU-T Recommendations..*
- [b-ITU-T A.2] Recommendation ITU-T A.2 (10/2008), *Recommendation ITU-T A.2 (2012), Presentation of contributions to the ITU Telecommunication Standardization Sector..*
- [b-ITU-T A.4] Recommendation ITU-T A.4 (06/2002), *Recommendation ITU-T A.4 (2012), Communication process between the ITU Telecommunication Standardization Sector and forums and consortia..*
- [b-ITU-T A.6] Recommendation ITU-T A.6 (06/2002), *Recommendation ITU-T A.6 (2012), Cooperation and exchange of information between the ITU Telecommunication Standardization Sector and national and regional standards development organizations..*
- [b-ITU-T A.8] Recommendation ITU-T A.8 (01/2024), *Recommendation ITU-T A.8 (2008), Alternative approval process for new and revised ITU-T Recommendations..*
- [b-ITU-T G.108.2] Recommendation ITU-T G.108.2 (03/2007), *Recommendation ITU-T G.108.2 (2007), Transmission planning aspects of echo cancellers..*
- [b-ITU-T G.709] Recommendation ITU-T G.709 (11/1988), *Recommendation ITU-T G.709/Y.1331 (2012), Interfaces for the optical transport network..*
- [b-ITU-T K.35] Recommendation ITU-T K.35 (12/2020), *Recommendation ITU-T K.35 (1996), Bonding configurations and earthing at remote electronic sites..*
- [b-ISO 704] ISO 704, *Terminology work—Principles and methods*, Fourth edition.
- [b-ITU style] Recommendation ITU style, *ITU English language style guide* (2015).
<http://www.itu.int/SG-CP/docs/styleguide.doc>.
- [b-ITU-T Rap] Recommendation ITU-T Rap, ITU-T, *Manual for Rapporteurs and Editors*, 12 February 2010.
<http://www.itu.int/oth/T0A0F000006/en>.
- [b-Essay] b-Essay, Essay Writing Center, *Definition Essay*.
http://essayinfo.com/essays/definition_essay.php (Referenced 1.02.2016).