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john.meredith@etsi.fr

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### **Presentation of Specification to TSG or WG**

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#### **Abstract of document:**

Rules for drafting 3GPP specifications.

In late 1998, an ad hoc group produced a first set of drafting rules to be used by 3GPP. This was made available in the "information" directory of the 3GPP file server, but was never allocated a formal specification number. The rules were based upon those in use by ETSI (ETSI TR 101 262), which were in turn those in use in ISO and largely accepted by ITU and other standards development organizations around the world. That document has now been tidied up and minor revisions done in the light of 18 months' 3GPP operational experience. It is now presented as an internal 3GPP report.

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#### **Outstanding Issues:**

None.

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#### **Contentious Issues:**

None.

# 3G TR 21.801 V1.0.1 (2000-06)

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*Technical Report*

## **3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Specification drafting rules (Release 2000)**



The present document has been developed within the 3<sup>rd</sup> Generation Partnership Project (3GPP<sup>TM</sup>) and may be further elaborated for the purposes of 3GPP.

The present document has not been subject to any approval process by the 3GPP Organizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPP only. The Organizational Partners accept no liability for any use of this Specification. Specifications and reports for implementation of the 3GPP<sup>TM</sup> system should be obtained via the 3GPP Organizational Partners' Publications Offices.

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Keywords

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GSM, UMTS, methodology

**3GPP**

Postal address

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3GPP support office address

---

650 Route des Lucioles - Sophia Antipolis  
Valbonne - FRANCE  
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

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<http://www.3gpp.org>

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## Foreword

This Technical Report has been produced by the 3<sup>rd</sup> Generation Partnership Project (3GPP) Secretariat on behalf of the 3GPP Technical Specification Groups (TSGs).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
  - 1 presented to TSG for information;
  - 2 presented to TSG for approval;
  - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

The present document is based ISO/IEC Directives. Most clauses of the ISO/IEC document have been retained, while some clauses have been modified or deleted. Additional material has been inserted.

Items concerning word-processor specific layout and formatting matters when using the Microsoft Word for Windows<sup>®</sup> based skeleton documents and templates are shown with shaded background. Boiler plate text (i.e. text which shall be directly used in 3GPP specifications) is represented by *italic* characters.

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# 1 Scope

The present document specifies rules for the structure and drafting of documents intended to become a 3GPP Technical Specification or Technical Report. These rules are intended to ensure that such documents are drafted in as uniform a manner as is practicable, irrespective of the technical content.

The present document is based on the ISO/IEC Directives, Part 3, but is a self-contained document that will be maintained as such.

These drafting rules complement the 3GPP Working Procedures.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, subsequent revisions do apply.

[1] ISO/IEC Directives - Part 3 (1997): "Rules for the structure and drafting of International Standards".

[2] ISO/IEC Guide 2:1996: "Standardization and related activities - General vocabulary".

[3] 3G TR 21.905: "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Vocabulary for 3GPP Specifications".

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# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3G TR 21.905 [3] and the following apply:

**informative elements:** those elements that provide additional information intended to assist the understanding or use of the 3G TS or 3G TR

**instruction:** provision that conveys an action to be performed [ISO/IEC Guide 2:1996, definition 7.3]

**normative element:** an element setting out provisions to which it is necessary to conform in order to be able to claim compliance with the Technical Specification

**provision:** expression in the content of a normative document, that takes the form of a statement, an instruction, a recommendation or a requirement [ISO/IEC Guide 2:1996, definition 7.1]

NOTE: These types of provision are distinguished by the form of wording they employ; e.g. instructions are expressed in the imperative mood, recommendations by the use of the auxiliary "should" and requirements by the use of the auxiliary "shall" (see annex E).

**recommendation:** provision that conveys advice or guidance [ISO/IEC Guide 2:1996, definition 7.4]

**requirement:** provision that conveys criteria to be fulfilled [ISO/IEC Guide 2:1996, definition 7.5]

**statement:** provision that conveys information [ISO/IEC Guide 2:1996, definition 7.2]



## 3.2 Abbreviations

For the purposes of the present document, the abbreviations given in 3G TR 21.905 [3] and the following apply:

ICS	Implementation Conformance Statement
PDF	Portable Document Format
SDL	Specification and Description Language
TS	Technical Specification
TTCN	Tree and Tabular Combined Notation

---

## 4 General principles

### 4.1 Objective

The objective of a 3G Technical Specification or Technical Report is to define clear and unambiguous provisions in order to facilitate international trade and communication. To achieve this objective, the 3G TS or TR shall:

- be as complete as necessary within the limits specified by its scope;
- be consistent, clear and accurate;
- provide a framework for future technological development; and
- be comprehensible to qualified persons who have not participated in its preparation.

### 4.2 Homogeneity

Uniformity of structure, of style and of terminology shall be maintained not only within each 3G TS or 3G TR, but also within a series of associated 3G TSs or 3G TRs. The structure of associated 3G TSs or 3G TRs and the numbering of their clauses shall, as far as possible, be identical. Analogous wording shall be used to express analogous provisions; identical wording shall be used to express identical provisions.

The same term shall be used throughout each 3G TS or 3G TR or series of 3G TSs or 3G TRs to designate a given concept. The use of an alternative term (synonym) for a concept already defined shall be avoided. As far as possible, only one meaning shall be attributed to each term chosen.

These requirements are particularly important not only to ensure comprehension of the 3G TS or 3G TR but also to derive the maximum benefit available through automated text processing techniques.

### 4.3 Consistency of 3G TSs and 3G TRs

In order to achieve the aim of consistency within the complete body of 3G TSs and 3G TRs, the text of every 3G TS and 3G TR shall be in accordance with the relevant provisions of existing basic 3G TSs and 3G TRs. This relates particularly to:

- standardized terminology;
- principles and methods of terminology;
- quantities, units and their symbols;
- abbreviations;
- bibliographic references; and
- graphical symbols.

In addition, for specific technical aspects, the relevant provisions of general 3G TSs or 3G TRs dealing with the following subjects shall be respected:

- limits;
- tolerancing of dimensions and uncertainty of measurement;
- preferred numbers;
- statistical methods;
- environmental conditions and associated tests.

## 4.4 Equivalence of official language versions

3G TSs or 3G TRs shall be in the English language only.

## 4.5 Fitness for implementation as a national, regional or international standard

The content of a 3G TS or 3G TR shall be drawn up in such a way as to facilitate its direct application and its adoption without change as a national, regional or international standard.

## 4.6 Planning

In order to ensure the timely publication of a 3G TS or 3G TR or of a series of associated 3G TSs or 3G TRs, the intended structure and any interrelationships shall be established before detailed drafting begins. In particular, consideration shall be given to the subdivision of the subject matter (see subclause 5.1). In the case of a multi-part 3G TS or 3G TR, a list of the intended parts together with their titles shall be drawn up. The rules given in the present document shall be applied from the very beginning of the work and throughout all subsequent stages to avoid delay at any stage.

## 4.7 (void)

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# 5 Structure

## 5.1 Subdivision of the subject matter

### 5.1.1 General

3G TSs or 3G TRs are so diverse that no universally acceptable rules can be established for the subdivision of the subject matter.

However, as a general rule, an individual 3G TS or 3G TR shall be prepared for each subject to be standardized, and published as a complete entity. In specific cases and for practical reasons, for example:

- the 3G TS or 3G TR is likely to become too voluminous;
- subsequent portions of the content are interlinked;
- portions of the 3G TS or 3G TR could be referred to in regulations; or
- portions of the 3G TS or 3G TR are intended to serve for certification purposes,

the 3G TS or 3G TR may be split into separate parts under the same number. This has the advantage that each part can be changed separately when the need arises.

In particular, the aspects of a product which will be of separate interest to different parties (e.g. manufacturers, operators, certification bodies, legislative bodies) shall be clearly distinguished, preferably as parts of a 3G TS or 3G TR or as separate 3G TSs or 3G TRs.

Such individual aspects are, for example:

- performance requirements;
- maintenance and service requirements; and
- quality assessment.

The terms that shall be used to designate the divisions and subdivisions that a 3G TS or 3G TR may have are shown in table 1.

**Table 1: Names of divisions and subdivisions**

Term	Example of numbering
part	3G TS 21.299-1
clause	1
subclause	1.1
subclause	1.1.1
annex	A
clause	A.1
subclause	A.1.1

### 5.1.2 Subdivision of the subject matter within a series of parts

There are two systems in use for subdividing into parts:

- a) Each part deals with a specific aspect of the subject and can stand alone.
- b) There are both common and specific aspects to the subject. The common aspects shall be given in part 1. Specific aspects (which may modify or supplement the common aspects and therefore cannot stand alone) shall be given in individual parts.

Where the system described in b) is used, care shall be taken that the references from one part to another are always to the latest version. There are two ways to achieve this:

- If reference is made to a particular element, the reference shall be specific (see subclause 6.6.6.5.2).
- Since the complete series of parts is normally under the control of the same TSG, the use of non-specific references (see subclause 6.6.6.5.3) is permitted, provided that corresponding changes are implemented simultaneously in all parts.

The use of non-specific references requires a high degree of discipline by the TSG responsible for the 3G TS or 3G TR.

Their use is not permitted between 3G TSs or 3G TRs of different Technical Bodies except where the reference is intentionally non-specific, i.e. it is accepted that it will be possible to use all future changes of the text referred to for the purposes of the referring 3G TS or 3G TR.

Each part of a multi-part 3G TS or 3G TR shall be drafted in accordance with the rules for an individual 3G TS or 3G TR as specified in the present document.

### 5.1.3 Subdivision of the subject matter within an individual 3G TS or 3G TR

**Table 2: Example of a typical arrangement of elements in a 3G TS or 3G TR**

Type of element	Arrangement of elements in 3G TS or 3G TR (note 1)	Permitted content of element(s) in 3G TS or 3G TR (note 1)
Informative preliminary	<b>Title page</b>	<b>Title</b>
	<b>Table of contents</b>	<i>(generated content, see subclause 6.1.2)</i>
	<b>Intellectual Property Rights (note 3)</b> <b>Foreword (note 4)</b>	<b>Text</b> <i>Note(s)</i>
	<i>Introduction</i>	<i>Text</i> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>
Normative general	<b>Scope</b>	<b>Text (no requirements)</b> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>
	Reference(s)	Reference(s)
Normative technical	Definition(s) Symbols and abbreviations Requirements : Normative annex	<i>Text</i> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>
	<i>Informative annex, (note 2)</i>	<i>Text</i> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>
Informative supplementary	<i>Bibliography</i>	<i>Informative reference(s)</i>
	<i>Index</i>	<i>(generated content)</i>
	<b>Change history (note 3)</b>	<i>Table</i>
NOTE 1: <b>Bold type</b> = required element; upright type = normative element; <i>italic type</i> = informative element.		
NOTE 2: Informative annexes may not contain normative elements.		
NOTE 3: Provided by the 3GPP Secretariat.		
NOTE 4: Partly provided by the 3GPP Secretariat.		

A 3G TS or 3G TR need not contain all the normative technical elements shown in table 2 and it may contain normative technical elements other than those shown. Both the nature of the normative technical elements and their sequence are determined by the nature of the 3G TS or 3G TR in question.

For an example of numbering of divisions and subdivisions see annex B.

A 3G TS or 3G TR may also contain notes to figures and tables (see subclauses 6.6.4.8, 6.6.4.9, 6.6.5.6 and 6.6.5.7).

## 5.2 Description and numbering of divisions and subdivisions

### 5.2.1 Parts and sub-parts

The number of a part shall be indicated by arabic numerals, beginning with 1, following the 3G TS or 3G TR number and preceded by a hyphen, for example:

- 3G TR 21.299-1, 3G TR 21.299-2.

## 5.2.1A General numbering issues

Every attempt shall be made to use continuous numbering as described in the remainder of 5.2. However, if continuous numbering cannot be maintained, a new element may be inserted in existing text using an appropriate alphanumeric designation that does not disturb the existing numbering scheme. This applies to all elements (e.g. clause, subclause, annex, figure, table, note, list).

EXAMPLE 1: It is necessary to update a 3G TS. A new clause needs to be inserted between the existing clauses 8 and 9. A new clause 8A may be inserted in preference to re-numbering the existing clauses.

EXAMPLE 2: A new figure needs to be inserted between existing figures 4 and 5. A new figure 4A may be inserted to avoid re-numbering of all subsequent figures.

Similarly, an existing element may be deleted and replaced with the term "Void." to minimize disruption to the numbering scheme. However, the title of the deleted element shall be retained.

EXAMPLE 3: During the updating of a 3G TS, it is decided that annex C is no longer required. The title of annex C remains while the content simply becomes "Void.". Later annexes may therefore remain unchanged.

EXAMPLE 4: It is decided to delete a note 3, so the text of note 3 becomes "Void." and there is no need to re-number note 4.

## 5.2.2 Clause

The clauses in each 3G TS or 3G TR or part shall be numbered with arabic numerals, beginning with 1 for the "Scope" clause. The numbering should be continuous, see also subclause 5.2.1A.

Each clause shall have a title (for formatting see subclause 5.2.3).

## 5.2.3 Subclause

A subclause is a numbered subdivision of a clause. A primary subclause (e.g. subclause 5.1, 5.2, etc.) may be subdivided into secondary subclauses (e.g. subclauses 5.1.1, 5.1.2, etc.) and this process of subdivision may be continued as far as the sixth heading level (e.g. subclause 6.5.4.3.2.1).

Subclauses shall be numbered with arabic numerals, see also subclause 5.2.1A.

A subclause should not be created unless there is at least one further subclause at the same level. For example, a piece of text in clause 10 should not be designated subclause "10.1" unless there is also a subclause "10.2".

Each subclause shall be given a title, which shall be placed after its number.

(Sub)clause titles shall be treated as normal text i.e. no additional capitalization, but no full stop.

- Use the **Heading** style appropriate to its level.
- Separate the number of the heading and the text of the heading with a tab.
- **Do not use automatic heading numbering**; you may, however, use it as an initial aid when outlining the structure of your document, as long as it is eliminated before handover to the 3GPP Secretariat.

## 5.2.4 Paragraph

"Hanging paragraphs" such as those shown in the following example should be avoided since reference to them is ambiguous.

EXAMPLE: In the following example, the hanging paragraphs indicated cannot be uniquely identified as being in "clause 5" since strictly speaking the paragraphs in 5.1 and 5.2 are also in clause 5. To avoid this problem it would be necessary either to identify the unnumbered paragraphs as subclause "5.1 XXXXXXXXXXXX" and to renumber the existing 5.1 and 5.2 accordingly (as shown), or to move the hanging paragraphs elsewhere.

Recommended
<p><b>5 Designation</b></p> <p><b>5.1 Xxxxxxxxxx</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p><b>5.2 Xxxxxxxxxx</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p><b>5.3 Xxxxxxxxxx</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p>xxxxxxxxxxxx xxxxxxxxxxxxxxx</p> <p><b>6 Test report</b></p>

Not recommended
<p><b>5 Designation</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx }</p> <p>xxxxxxx x xxxxxxxxxxxxxxx } hanging paragraphs</p> <p>xxxxxxx x xxxxxxxxxxxxxxx }</p> <p><b>5.1 Xxxxxxxxxx</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p><b>5.2 Xxxxxxxxxx</b></p> <p>xxxxxxx x xxxxxxxxxxxxxxx xxxxxxxxxxxxxxxxxxx</p> <p>xxxxxxxxxxxx xxxxxxxxxxxxxxx</p> <p><b>6 Test report</b></p>

### 5.2.5 Lists

Lists may be introduced by a sentence, a complete grammatical proposition followed by a colon, or by the first part of a proposition (without a colon), completed by the items in the list.

Each item in a list shall be preceded by a dash.

EXAMPLE 1:

- list item 1;
- list item 2.

If necessary for identification, a lower-case letter followed by a parenthesis may be used. If it is necessary to subdivide an item further in this type of list, arabic numerals followed by a parenthesis shall be used (see also subclause 5.2.1A).

EXAMPLE 2:

- a) list item a;
- b) list item b;
  - 1) list item a 1);
  - 2) list item a 2).

Respect normal rules of punctuation: if the elements of a list are cast as phrases of a sentence which introduces the list, start each element with a lower case letter and end it with a semicolon. End the last item in the list with a full stop, unless the introductory sentence continues after the end of the list, in which case use the most appropriate punctuation (semicolon, comma, or none). If, however, each element of a list is a self-contained sentence, begin each with a capital letter and end each with a full-stop.

Use "and" or "or" at the end (following the semicolon) of the penultimate element of a list to indicate unambiguously whether the elements are combinable or whether they are mutually exclusive.

- Use the appropriate bullet styles, i.e. styles **B1** to **B5**.
- Separate the list item identifier (e.g. bullet) and the text with a tab (if not using automatic bullets and numbering).
- Ensure that the formatting of the lists is consistent throughout the deliverable.

## 5.2.6 Annex

For the description of normative and informative annexes, see subclauses 6.3.8 and 6.4.1.

Each annex shall be designated by a heading comprising the word "Annex" followed by a capital letter designating its serial order, beginning with "A", e.g. "Annex A" (see also subclause 5.2.1A). The annex heading shall be followed by the indication "(normative):" or "(informative):", and by the title on the next line.

EXAMPLE:     Annex A (normative):  
                  Title of annex A

Numbers given to the clauses, subclauses, tables, figures and mathematical formulae of an annex shall be preceded by the letter designating that annex followed by a full-stop (e.g. figure B.1, table C.4). The numbering shall start afresh with each annex. A single annex shall be designated "Annex A".

Clauses in annex A shall be designated "A.1", "A.2", "A.3", etc. (see also subclause 5.2.1A).

For endorsement of documents from other standards organizations, see annex J.

- Use the **Heading 8** style (for 3G TSs) or **Heading 9** style (for 3G TRs) for the annex heading. Insert a line break (↵ "shift" + "enter") between the colon and the title.
- For all (sub)clause headings use the appropriate Heading styles, starting from **Heading 1**, e.g. for clause A.1 use **Heading 1**, for A.1.1 use **Heading 2**.

## 5.2.7 Bibliography

A bibliography, if present, shall appear after the penultimate annex entitled "Bibliography".

## 5.2.8 Index

An index, if present, shall appear as the last element. The title shall be "Index".

- Use **Heading 1** style for the title.

## 5.2.9 Change history

Shall appear as the last element (informative annex).

- Use **Heading 1** style for the title.

---

# 6 Drafting

## 6.1 Preliminary informative elements

### 6.1.1 Title page

The title page shall contain the title of the 3G TS or 3G TR.

The wording of the title shall be established by the TSG with the greatest care. While being as concise as possible, it shall indicate, without ambiguity, the subject matter of the 3G TS or 3G TR in such a way as to distinguish it from that of other 3G TSs or 3G TRs, without going into unnecessary detail. Any necessary additional particulars shall be given in the scope.

The title shall be composed of separate elements, each as short as possible, proceeding from the general to the particular. In general, not more than the following three elements shall be used:

- a) an introductory element "3<sup>rd</sup> Generation Partnership Project; Technical Specification Group nn;" (where nn indicates the particular TSG concerned);
- b) a main element (obligatory) indicating the principal subject treated within that general field;
- c) a complementary element (optional) indicating the particular aspect of the principal subject or giving details that distinguish the 3G TS or 3G TR from other 3G TSs or 3G TRs, or other parts of the same 3G TS or 3G TR.
- d) in parentheses, the 3G TS or TR number followed by "Release yyyy" where yyyy indicates the year of the Release.

See also annex D.

NOTE: The 3GPP Secretariat is responsible for the final preparation of the title page.

For multi-part deliverables, all the individual titles in a series of parts shall contain the same introductory element (if present) and main element, while the complementary element shall be different in each case in order to distinguish the parts from one another. The complementary element shall be preceded in each case by the designation "Part ...".

For endorsement of documents from other standards organizations, see annex J.

## 6.1.2 Table of contents

The table of contents shall be generated automatically and shall not be set manually. The title shall be "Contents".

- Use the **TT** style for the title.
- Use the field `{TOC \o}` for the table itself.

NOTE: The 3GPP Secretariat is responsible for the final layout of the table of contents.

### 6.1.2A (void)

## 6.1.3 Foreword

The foreword shall appear in each 3G TS or 3G TR. It shall not contain requirements, figures or tables.

It consists of a general part giving information on:

- the designation and name of the TSG that prepared the 3G TS or 3G TR;
- information regarding the approval of the 3G TS or 3G TR;

and a specific part that shall give as many of the following as are appropriate:

- an indication of any other organization that has contributed to the preparation of the 3G TS or 3G TR;
- a statement that the 3G TS or 3G TR cancels and replaces other documents in whole or in part;
- a statement of significant technical changes from the previous version of the 3G TS or 3G TR;
- the relationship of the 3G TS or 3G TR to other 3G TSs or 3G TRs or other documents.

For multi-part deliverables, the first part shall include in its foreword an explanation of the intended structure of the series. In the foreword of each part belonging to the series, a reference shall be made to the titles of all other parts, if they are known.



## 6.1.3A (void)

## 6.1.4 Introduction

The introduction is an optional preliminary element used, if required, to give specific information or commentary about the technical content of the 3G TS or 3G TR, and about the reasons prompting its preparation. It shall not contain requirements.

The introduction shall not be numbered unless there is a need to create numbered subdivisions. In this case, it shall be numbered 0 with subclauses being numbered 0.1, 0.2, etc. Any numbered figure, table or displayed formula shall be numbered normally beginning with 1 (see also subclause 5.2.1A).

## 6.2 General normative elements

### 6.2.1 Scope

This element shall be clause 1 of each 3G TS or 3G TR and define without ambiguity the subject of the 3G TS or 3G TR and the aspect(s) covered, thereby indicating the limits of applicability of the 3G TS or 3G TR or particular parts of it. It shall not contain requirements.

The scope shall be succinct so that it can be used as a summary for bibliographic purposes.

This element shall be worded as a series of statements of fact. Forms of expression such as the following shall be used:

*"The present document*

- *specifies*      { *the functional requirements for ... "*  
                          { *a method of ... "*  
                          { *the characteristics of ... "*
- *establishes*    { *a system for ... "*  
                          { *general principles for ... "*
- *gives guidelines for ... "*
- *gives terms and definitions ... "*

Statements of applicability of the 3G TS or 3G TR shall be introduced by the following wording:

*"The present document is applicable to ... "*

### 6.2.2 References

This is an optional element which shall be provided if references are made to other documents. References shall normally be given to Standards and Recommendations issued by recognized standardization bodies. Referencing of documents other than Standards and Recommendations are allowed under the following conditions:

- all referenced text shall be publicly available in the English language during the approval phases and for the expected lifetime of the 3G TS or 3G TR, via the originating body or via the 3GPP Secretariat;
- if public availability cannot be guaranteed over a period of time as stated above, the originating body of the referenced text shall give 3GPP or its constituent Organizational Partners the right to reproduce the text;
- if the referenced text will not be made publicly available otherwise, agreement permitting 3GPP or its Organizational Partners to take over the copying and distribution rights will be required, in which case it shall be made available to 3GPP or its Organizational Partners in an agreed electronic format;
- all copyright and other IPR issues shall have been settled;
- the 3GPP Secretariat shall establish and maintain a list of the referenced documents and the relevant external bodies, for document tracking and cross-referencing purposes, and keep the necessary liaison with the originating body.

The list of references shall be introduced by the wording given in the approved 3G TS / TR template.

The list shall not include the following:

- documents that are not publicly available;
- documents which are not explicitly cited in the provisions of the deliverable (such documents may be listed in a bibliography (see subclause 6.4.2)).
- Use the **EX** style, if using numbered references; enclose the numbers in square brackets and separate the numbering from the title with a tab (you may use sequence fields for automatically numbering references, see clause H.4: "Sequence numbering").
- Use the **Normal** style, if not using numbered references.

EXAMPLE 1:

[1]                    3G TS 21.299 (V1.1): "Title".

EXAMPLE 2:

3G TS 21.299 (V1.1): "Title".

## 6.3 Technical normative elements

### 6.3.1 Definitions

This is an optional element giving definitions necessary for the understanding of certain terms used in the 3G TS or 3G TR. The following introductory wording, modified as appropriate, given in the 3G TS / TR template shall be used.

Rules for the drafting and presentation of terms and definitions are given in annex C, together with special rules for terminology standards, such as vocabularies, or nomenclatures.

Entries in the definition clause may be numbered.

- Order the terms alphabetically, unless some logical grouping dictates otherwise.
- The term shall be in **bold**, and shall start with a lower case letter (unless it is *always* rendered with a leading capital) followed by a colon, one space, and the definition.
- Use the **Normal** style.

EXAMPLE:

**requirement:** a provision that conveys criteria to be fulfilled

### 6.3.2 Symbols and abbreviations

This is an optional element giving a list of the symbols and abbreviations necessary for the understanding of the 3G TS or 3G TR.

Unless there is a need to list symbols in a specific order to reflect technical criteria, all symbols should be listed in alphabetical order in the following sequence:

- upper case Latin letter followed by lower case Latin letter (*A, a, B, b*, etc.);
- letters without indices preceding letters with indices, and with letter indices preceding numerical ones (*B, b, C, C<sub>m</sub>, C<sub>2</sub>, c, d, d<sub>ext</sub>, d<sub>int</sub>, d<sub>1</sub>*, etc.);
- Greek letters following Latin letters (*Z, z, A, α, B, β, ... Λ, λ*, etc.);
- any other special symbols.

This list shall contain all technical abbreviations/acronyms and their corresponding full terms which are used within the 3G TS or 3G TR. See also subclause 6.6.2.

For convenience, this element may be combined with the definitions in order to bring together terms and their definitions, symbols and abbreviations under an appropriate composite title, for example "Definitions, symbols and abbreviations".

Do not number the entries in the symbols and/or abbreviations subclause.

- Use the **EW** style.
- Separate the abbreviation/acronym from the full term with a tab.

EXAMPLE:

dB	decibel
DDI	Direct Dialling-In

### 6.3.3 Requirements

This element is optional. If present, it shall contain the following:

- a) all characteristics relevant to the aspect(s) of the product(s), process(es) or service(s) covered by the 3G TS or 3G TR, either explicitly or by reference;
- b) the required limiting values of quantifiable characteristics.

For test methods see subclause 6.3.5.

A clear distinction shall be made between requirements, statements and recommendations.

Contractual requirements concerning claims, guarantees, covering of expenses, etc. shall not be included.

In some product 3G TSs or 3G TRs, it may be necessary to specify that the product shall be accompanied by warning notices or by instructions to the user or installer, and to specify their nature. On the other hand, requirements concerning use or installation as such shall be included in a separate part or a separate 3G TS or 3G TR since they are not requirements applicable to the product itself.

3G TSs or 3G TRs listing characteristics for which suppliers are required to state values that are not specified by the 3G TS or 3G TR itself shall specify how such values are to be measured and stated.

For endorsement of documents from other standards organizations, see annex J.

### 6.3.4 Sampling

This optional element specifies the conditions and methods of sampling, as well as the method for the preservation of the sample(s). This element may appear at the beginning of test methods.

### 6.3.5 Test methods

This optional element gives all the instructions concerning the procedure for determining the values of characteristics, or for checking conformity to stated requirements, and for ensuring the reproducibility of the results. If appropriate, tests shall be identified to indicate whether they are type tests, routine tests, sampling tests and so on.

Instructions relating to test methods may be subdivided in the following order (where appropriate):

- a) principle;
- b) apparatus;
- c) preparation and preservation of test samples and test pieces;
- d) procedure;
- e) test report.

Test methods may be presented as separate clauses, or be incorporated in requirements, or be presented as annexes (see subclause 6.3.8) or as separate parts (see subclause 5.2.1). A test method shall be prepared as a separate 3G TS if it is likely to be referred to in a number of other 3G TSs.

The need for specification of test methods shall be evaluated on a case by case basis.

A test specification enables verification that products designed to a standard conform to its requirements. When writing a 3G TS you should consider the need for an accompanying test specification.

Every requirement of a 3G TS specifying a product (equipment, system or service) needs to be testable, and such requirements need to be clearly distinguishable from statements of fact or of supposition.

EXAMPLE: Comparing the two sentences below:

"On receiving a START CALL message, the terminal shall respond by sending an ACKNOWLEDGE message within a delay of  $t_1$ ."

"On receiving a START CALL primitive, the layer 3 protocol of the terminal shall move to state CALL ACTIVATED and shall start timer  $t_2$ ."

It is clear that conformance to the first requirement can be verified by external stimulus and observation, whereas the second puts demands on a conceptual model which cannot be explicitly tested. Whilst requirements of the latter sort are useful - even essential - for describing operational details, the essential behavioural characteristics (normative provisions) are given by requirements of the type of the former, and only these are verifiable.

## 6.3.6 Classification and designation

Void.

## 6.3.7 Marking, labelling and packaging

Void.

## 6.3.8 Normative annexes

For reasons of convenience it may be decided to place some part of the normative text in an annex.

Normative annexes contain provisions to which it is necessary to conform in order to be able to claim compliance with the 3G TS. Their status shall be indicated in the heading of the annex (see subclause 5.2.6).

Normative annexes shall not appear in 3G TRs.

## 6.4 Supplementary informative elements

### 6.4.1 Informative annexes

For reasons of convenience it may be decided to place some part of the informative text in an annex.

Informative annexes give additional information intended to assist the understanding or use of the 3G TS or 3G TR and shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the 3G TS. Their presence is optional and their status shall be indicated in the heading of the annex (see subclause 5.2.6).

### 6.4.2 Bibliography

The Bibliography identifies documents which are not explicitly cited in the body of the 3G TS or 3G TR.

Format references as described in subclause 6.2.2.

### 6.4.3 Index

- Format the index in a section having two columns separated by 0,5 cm using the field `{INDEX |e "→" |c "2"}`.

### 6.4.4 Change history

A history box is provided by the 3GPP Secretariat as the final element in a 3G TS or 3G TR and shows the major milestones in the life of a document. See also clause H.6.

NOTE: The 3GPP Secretariat is responsible for the final preparation of the history box.

## 6.5 Other informative elements

### 6.5.1 Notes and examples integrated in the text

Notes and examples integrated in the text of a 3G TS or 3G TR shall only be used for giving additional information intended to assist the understanding or use of the 3G TS or 3G TR. They shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the 3G TS or 3G TR.

Notes and examples should preferably be placed at the end of the clause or subclause, or after the paragraph, to which they refer.

A single note in a (sub)clause shall be preceded by "NOTE:", placed at the beginning of the first line of the text of the note. When several notes occur within the same element (e.g. subclause), they shall be designated "NOTE 1:", "NOTE 2:", "NOTE 3:", etc. (see also subclause 5.2.1A).

The word NOTE shall appear in upper case.

- Use the **NW** or **NO** style.
- Separate NOTE: from the text of the note with a tab.

EXAMPLE 1:

NOTE 1: Note text formatted with the **NW** style will be formatted **without** a space after the paragraph.  
NOTE 2: Note text formatted with the **NO** style will be formatted **with** a space after the paragraph.

END of EXAMPLE 1

A single example in a (sub)clause shall be preceded by "EXAMPLE:", placed at the beginning of the first line of the text of the example. When several examples occur within the same element (e.g. subclause), they shall be designated "EXAMPLE 1:", "EXAMPLE 2:", "EXAMPLE 3:", etc. (see also subclause 5.2.1A).

When there is a danger that it may not be clear where the example ends and the normal text continues, then the end of the example may be designated by "END of EXAMPLE".

The word EXAMPLE shall appear in upper case.

- Use the **EX** style.
- Separate EXAMPLE: from the text of the example with a tab.

EXAMPLE 2:

EXAMPLE:      Example text.

END of EXAMPLE 2

### 6.5.2 Footnotes to the text

Footnotes shall not be used in 3G TSs or 3G TRs.

## 6.6 Common rules and elements

### 6.6.1 Verbal forms for the expression of provisions

A 3G TS does not in itself impose any obligation upon anyone to follow it. However, such an obligation may be imposed, for example, by legislation or by a contract. In order to be able to claim compliance with a 3G TS, the user needs to be able to identify the requirements that are obligatory. The user also needs to be able to distinguish these requirements from other provisions where there is a certain freedom of choice.

Clear rules for the use of verbal forms (including modal auxiliaries) are therefore essential. Annex E gives, in the first column of each table, the verbal form that shall be used to express each kind of provision. The equivalent expressions given in the second column shall be used only in exceptional cases when the form given in the first column cannot be used for linguistic reasons.

### 6.6.2 Spelling and abbreviation of names of organizations, and style

The spelling of the names of organizations, and their abbreviations, shall be as used by those organizations.

To facilitate understanding by all readers, the style shall be as simple and concise as possible. This is particularly important for those readers whose first language is not English.

The "Shorter Oxford English Dictionary" and the "Concise Oxford Dictionary" are suggested.

Abbreviations shall be used with care, and their use shall be limited to those cases where it is not likely to cause confusion.

An abbreviation shall be specified only if used subsequently in the 3G TS or 3G TR.

The general rule is that abbreviations consisting of the initial letters of words be printed in lower-case letters (for example, "a.c." for "alternating current") and a full-stop be placed after each letter. Where, however, an abbreviation comprises capital letters, no full-stops are required.

#### 6.6.2A Use of capital letters

Unnecessary use of capital letters should be avoided.

EXAMPLE: "user" is preferred to "User".

#### 6.6.2B Pagination

Unnecessary pagination, (i.e. use of hard page breaks) should be avoided.

- Use Format | Paragraph | Text Flow | Keep Lines Together and Keep with Next attributes instead of "hard" page breaks.

### 6.6.3 Use of trade names

A correct designation or description of a product shall be given rather than a trade name (brand name).

Proprietary trade names (i.e. trade marks) for a particular product should as far as possible be avoided, even if they are in common use.

If, exceptionally, trade names cannot be avoided, their nature shall be indicated, e.g. by the symbol ® for a registered trade mark (see example 1).

EXAMPLE 1: Instead of "Teflon®", write "polytetrafluoroethylene (PTFE)".

If it is known that only one product is currently available that is suitable for the successful application of the standard, the trade name of the product may be given in the text of the standard but shall be associated with a note as shown in example 2.

## EXAMPLE 2:

NOTE: "... [trade name of product] ... is the trade name of a product supplied by ... [supplier] .... This information is given for the convenience of users of the present document and does not constitute an endorsement by 3GPP of the product named. Equivalent products may be used if they can be shown to lead to the same results."

If it is considered to be essential to give an example (or examples) of commercially available products suitable for successful application of the standard because the product characteristics are difficult to describe in detail, trade names may be given in a note as shown in example 3.

## EXAMPLE 3:

NOTE: "... [trade name(s) of product(s)] ... is (are) an example(s) of a suitable product(s) available commercially. This information is given for the convenience of users of the present document and does not constitute an endorsement by 3GPP of this (these) product(s)."

## 6.6.4 Figures

### 6.6.4.1 Usage

Figures should be used wherever appropriate to present information in an easily comprehensible form. It shall be possible to refer to each figure explicitly within the text.

### 6.6.4.2 Format

Figures shall be prepared in accordance with annex I.

- Use the **TH** style on the paragraph which contains the figure itself.
- Maximum size for figures is 17 cm by 22 cm.

### 6.6.4.3 Numbering

Figures may be numbered sequentially throughout the document without regard to the clause numbering, e.g. first figure is figure 1 and the twentieth figure (in, say clause 7) is figure 20.

Figures may also be numbered taking account of clause or subclause numbering.

EXAMPLE 1: First figure in clause 7 is figure 7.1, fifth figure in clause 7 is figure 7.5.

EXAMPLE 2: First figure in subclause 7.3.2 is figure 7.3.2.1, fifth figure in subclause 7.3.2 is figure 7.3.2.5.

One level of subdivision only is permitted (e.g. figure 1 may be subdivided as 1 a), 1 b), 1 c), etc.). See also subclause 5.2.1A. For the numbering of figures in annexes, see subclause 5.2.6.

- You may use sequence fields for automatically numbering tables. See clause H.4: "Sequence numbering".

### 6.6.4.4 Layout of title

The figure title shall be below the figure. An explicit figure name is optional. See the following examples:

EXAMPLE 1:

**Figure 1: Details of apparatus**

EXAMPLE 2:

**Figure 1**

- Use the **TF** style.
- If applicable, the figure number is followed by a colon, a space and the figure name

#### 6.6.4.5 Choice of letter symbols, style of lettering, and labelling

- Use Arial font.
- Use a font size of at least 8 points (final size), to ensure legibility.

#### 6.6.4.6 Technical drawings

Void.

#### 6.6.4.7 Diagrams

Void.

#### 6.6.4.8 Notes to figures

Notes to figures shall be treated independently from notes integrated in the text (see subclause 6.5.1). They shall be located above the title of the relevant figure. A single note in a figure shall be preceded by "NOTE:". When several notes occur in the same figure, they shall be designated "NOTE 1:", "NOTE 2:", "NOTE 3:", etc. (see also subclause 5.2.1A). A separate numbering sequence shall be used for each figure.

Notes to figures may contain requirements.

- Write notes to a figure using the word processor rather than embedding them in the figure itself.
- Use the **NF** style.
- Separate NOTE: from the text of the note with a tab.

#### 6.6.4.9 Footnotes to figures

Footnotes shall not be used in 3G TSs or 3G TRs.

### 6.6.5 Tables

#### 6.6.5.1 Usage

Tables should be used wherever appropriate to present information in an easily comprehensible form. It shall be possible to refer to each table explicitly within the text.

A table within a table is not permitted. Subdivision of a table into subsidiary tables is not permitted.

- Centre tables horizontally.
- The "space between columns" is 0,1 cm.
- Maximum width for tables in portrait orientation: 17 cm and for landscape orientation: 22 cm.
- Set table columns widths in centimetres (not inches).
- Use borders to separate the rows and columns of tables, as appropriate; the precise format will depend on the structure of each table, but be consistent throughout a deliverable (or series of related deliverables). Borders should be ¾ pt single line.
- Each table shall be followed by an empty "Normal" style paragraph ("Enter" key).

#### 6.6.5.2 Numbering

Tables may be numbered sequentially throughout the document without regard to the clause numbering, e.g. first table is table 1 and the twentieth table (in, say clause 7) is table 20.

Tables may also be numbered taking account of clause or subclause numbering.



EXAMPLE 1: First table in clause 7 is table 7.1, fifth table in clause 7 is table 7.5.

EXAMPLE 2: First table in subclause 7.3.2 is table 7.3.2.1, fifth table in subclause 7.3.2 is table 7.3.2.5.

See also subclause 5.2.1A. For the numbering of tables in annexes, see subclause 5.2.6.

- You may use sequence fields for automatically numbering tables. See clause H.4: "Sequence numbering".

### 6.6.5.3 Layout of title

The title shall be above the table. An explicit table name is optional. See the following examples:

EXAMPLE 1:

**Table 1: Electrical properties**

EXAMPLE 2:

**Table 1**

- Use the **TH** style.
- If applicable, the table number is followed by a colon, a space and the table name

### 6.6.5.4 Headings

The first word in the heading of each column shall begin with a capital letter. The units used in a given column shall generally be indicated under the column heading.

EXAMPLE:

Type	Linear density (kg/m)	Inside diameter (mm)	Outside diameter (mm)

- Use of the table headings tool (**Table, Headings**) is encouraged for tables that require more than one page.
  - Use the following styles:
    - Table Headings       **TAH**
    - Text Left justified   **TAL**
    - Text Centred         **TAC**
    - Text Right justified   **TAR**

### 6.6.5.5 Continuation of tables

The column headings shall be repeated on all pages after the first.

### 6.6.5.6 Notes to tables

Notes to tables shall be treated independently from notes integrated in the text (see subclause 6.5.1). They shall be located within the frame of the relevant table. A single note in a table shall be preceded by "NOTE:". When several notes occur in the same table, they shall be designated "NOTE 1:", "NOTE 2:", "NOTE 3:", etc. (see also subclause 5.2.1A). A separate numbering sequence shall be used for each table.

Notes to tables may contain requirements.

- Use the **TAN** style.
- Include notes to a table within its borders in *one* cell, at the bottom.

- Merge all cells to one, as in the following example:

EXAMPLE:

Column 1 cell	Column 2 cell	Column 3 cell	Column 4 cell
NOTE: This cell is a merged cell.			

### 6.6.5.7 Footnotes to tables

Footnotes shall not be used in 3G TSs or 3G TRs.

## 6.6.6 References

### 6.6.6.1 General

As a general rule, references to particular pieces of text shall be used instead of repetition of the original source material, since such repetition involves the risk of error or inconsistency and increases the length of the document. However, if it is considered necessary to repeat such material, its source shall be identified precisely.

References shall be made in the forms indicated in subclauses 6.6.6.2 to 6.6.6.5 and shall not be made to page numbers.

### 6.6.6.2 References to the 3G TS or 3G TR as a whole in its own text

The form "the present document ..." shall be used.

### 6.6.6.3 References to elements of text

Use, for example, the following forms:

- "in accordance with clause 3";
- "according to 3.1";
- "as specified in subclause 3.1 b)";
- "details as given in subclause 3.1.1";
- "see annex B";
- "the requirements given in clause B.2";
- "see the note in table 2";
- "see example 2 in subclause 6.6.3";
- "see note 3 in subclause 6.6.1".

It is required to use the terms *clause* and *annex* where applicable. It is unnecessary to use the term "subclause".

If there is a need to refer to an unordered list item in another standard, the following formulation shall be used:

"as specified in 3.1, second list item".

Lower case letters are recommended (e.g. clause 1, annex A), however capital letters are also acceptable (e.g. Clause 1, Annex A). Usage should be consistent throughout the document.

#### 6.6.6.4 References to tables and figures

Every table and figure included in the 3G TS or 3G TR shall be referred to in the text.

Use, for example, the following forms:

- "given in table 2";
- "(see table B.2)";
- "shown in figure A.6";
- "(see figure 3)".

Lower case letters are recommended (e.g. table 1, figure 2), however capital letters are also acceptable (e.g. Table 1, Figure 2). Usage should be consistent throughout the document.

#### 6.6.6.5 References to other documents

##### 6.6.6.5.1 General

References to other documents may be specific or non-specific. All references, specific and non-specific, shall be given in the "References" clause (see subclause 6.2.2).

##### 6.6.6.5.2 Specific references

Except as provided for in 6.6.6.5.3, references shall be specific (identified by date of publication, edition number, version number, etc.).

Use the following forms:

- "... in accordance with 3G TS 21.299, clause 3, ...";
- "... in accordance with [n], clause 3, ...";
- "... in accordance with 3G TS 21.299 [n], clause 3, ...".

##### 6.6.6.5.3 Non-specific references

Non-specific references may be made only in the following cases:

- if it is accepted that it will be possible to use future changes of the document referred to for the purposes of the referring 3G TS or 3G TR;
- if it is granted that the structure of the document referred to will not change for the specific locations which are used by the referring 3G TS or 3G TR (e.g. the referred to document is controlled by the same TSG as the referring one).

Use the forms as in 6.6.6.5.2.

#### 6.6.7 Representation of numbers and numerical values

The decimal sign shall be a comma. The thousand separator shall be a space.

NOTE: In the text below, ° represents the non-breaking space character.

If a value less than 1 is written in decimal form, the decimal sign shall be preceded by a zero.

EXAMPLE 1: 0,001

Each group of three digits reading to the left or to the right of a decimal sign shall be separated by a space from preceding digits or following digits respectively, except for four-digit numbers designating years.

EXAMPLE 2: 23°456 / 2°345 / 2,345 / 2,345°6 / 2,345°67 but the year 1997

For clarity, the symbol  $\times$  or a lower case x (rather than a point or any other symbol) shall be used to indicate multiplication of numbers and numerical values.

EXAMPLE 3: write  $1,8^\circ \times 10^{-3}$  (not  $1,8 * 10^{-3}$  or  $1,8 \bullet 10^{-3}$  or  $1,8 . 10^{-3}$ )

To express numbers of items (as opposed to numerical values of physical quantities), the numerals one to nine shall be spelt out in full.

EXAMPLE 4: "Carry out the test on five tubes, each 5 m long."

EXAMPLE 5: "Select a further 15 tubes for the pressure test."

Preserve document identities as in the original titles.

EXAMPLE 6: ISO/IEC°10531-1 (not ISO/IEC 10°531-1).

EXAMPLE 7: TS°21°801.

Put a non-breaking space between a number and its unit - including the percent sign (%) - even if the unit is not abbreviated:

EXAMPLE 8: 2°pages 4°seconds 15°%

Write a number preceded by an unary operator (sign) without an intervening space:

EXAMPLE 9: ... a level of -3°dB ...

Put a non-breaking space both before and after binary operators (+, -, ×, etc.):

EXAMPLE 10: a°+°b°=°c

- Use non-breaking spaces (Ctrl + Shift + space) for the thousand separator, before and after binary operators and preceding units.
- Use a non-breaking hyphen (Ctrl + Shift + -) for the minus sign.

## 6.6.8 Quantities, units, symbols and signs

The units in which any values are expressed shall be indicated.

## 6.6.9 Mathematical formulae

### 6.6.9.1 Types of equations

Equations between quantities are preferred to equations between numerical values. Equations shall be expressed in mathematically correct form, the variables being represented by letter symbols the meanings of which are explained in connection with the equations, unless they appear in a "Symbols and abbreviations" clause (see subclause 6.3.2). Descriptive terms, acronyms or names of quantities shall not be arranged in the form of an equation.

EXAMPLE:

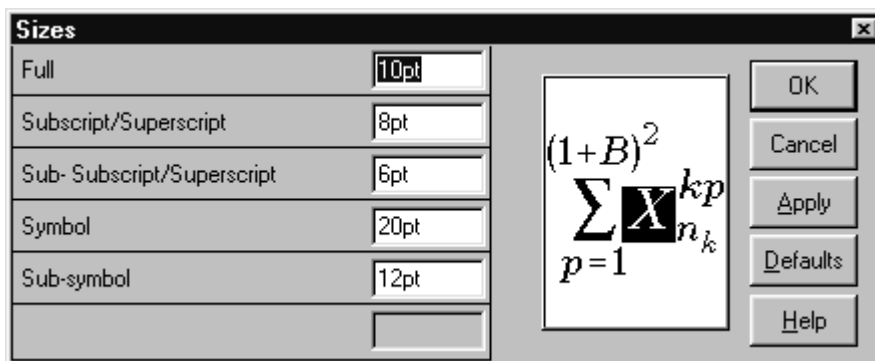
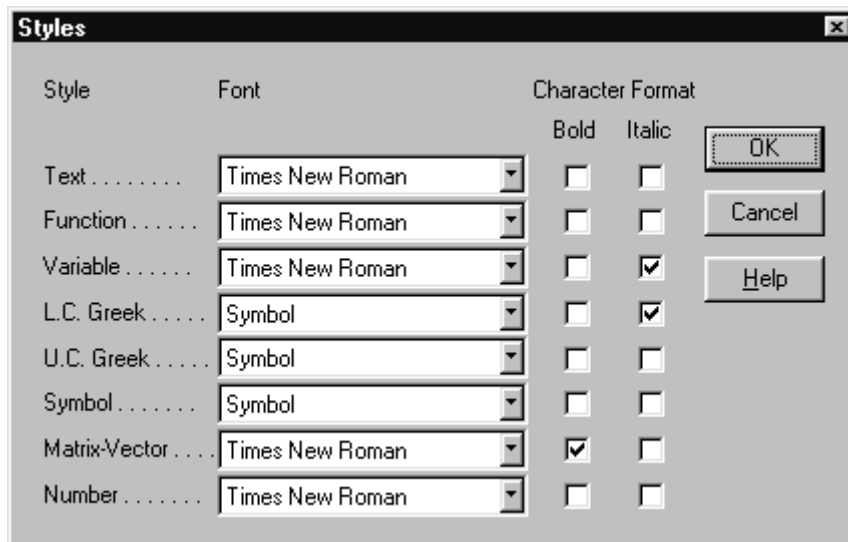
$$\tau = \sqrt{\frac{1}{(6n^2(N-3n+1)) \sum_{j=1}^{N-3n+1} \left( \sum_{i=j}^{n+j-1} (x_{i+2n} - 2x_{i+n} + x_i) \right)^2}}$$

where:  $x_j$  are samples of time errors data;  
 N is the total number of samples;  
 $\tau$  is the time error sampling interval;  
 n is the number of sampling intervals, with  $n = 1, 2, \dots$ , integer part (N/3).

### 6.6.9.2 Presentation

- Use the EQ style.
- Insert one tab before the equation to center it.

The equation editor sizes and styles should be respected as shown in the following examples:



### 6.6.9.3 Numbering

If it is necessary to number some or all of the formulae in a 3G TS or 3G TR in order to facilitate cross-reference, arabic numbers in parentheses shall be used, beginning with 1:

$$x^2 + y^2 < z^2 \tag{1}$$

Equations may be numbered sequentially throughout the document without regard to the clause numbering, e.g. first equation is equation 1 and the twentieth equation (in, say clause 7) is equation 20.

Equations may also be numbered taking account of clause or subclause numbering.

EXAMPLE 1: First equation in clause 7 is equation 7.1, fifth equation in clause 7 is equation 7.5.

EXAMPLE 2: First equation in subclause 7.3.2 is equation 7.3.2.1, fifth equation in subclause 7.3.2 is equation 7.3.2.5.

See also subclause 5.2.1A. For the numbering of equations in annexes see subclause 5.2.6.

- You may use sequence fields for automatically numbering tables. See clause H.4: "Sequence numbering".
- Insert a tab between the equation and the number to right-align the number.

## 6.6.10 Indication of dimensions and tolerances

Dimensions and tolerances shall be indicated in an unambiguous manner.

EXAMPLE 1: 80 mm<sup>°</sup>×<sup>°</sup>25 mm<sup>°</sup>×<sup>°</sup>50 mm (not 80 × 25 × 50 mm)

EXAMPLE 2: 80 μF<sup>°</sup>±<sup>°</sup>2 μF or (80 ± 2) μF

EXAMPLE 3: 16 kbit/s to 64 kbit/s (not 16 to 64 kbit/s)

EXAMPLE 4: 0 °C to 10 °C (not 0 to 10 °C)

In order to avoid misunderstanding, tolerances on percentages shall be expressed in a mathematically correct form.

EXAMPLE 5: Write "from 63°% to 67°%" to express a range.

EXAMPLE 6: Write "(65°±<sup>°</sup>2)°%" to express a centre value with tolerance.

The form "65°±<sup>°</sup>2°%" shall not be used.

---

## 7 Presentation of computer language and other code

Portions of code (e.g. ASN.1, GDMO, C, C++, etc.) can be included in a 3G TS or 3G TR but should be clearly marked as such.

- Use the **PL** style.

---

## Annex A (informative): (void)

Annex B (informative):  
(void)

---

## Annex C (normative): Drafting and presentation of terms and definitions

### C.1 General principles

#### C.1.1 Rules for development

Void.

#### C.1.2 Types of standard

Terminology may take the form of an independent 3GPP terminology deliverable (a vocabulary or a nomenclature) or be included in a "Definitions" clause in a 3G TS or 3G TR that also deals with other aspects.

#### C.1.3 Choice of concepts to be defined

Any term which is not self-explanatory or commonly known and which can be differently interpreted in different contexts shall be clarified by defining the relevant concept.

Common dictionary or current technical terms shall be included only if they are used with a specific meaning in the relevant context.

Trade names (brand names) and archaic and colloquial terms shall be avoided.

Deprecated terms may be included after the preferred term but their nature shall be indicated (by adding the word deprecated, see subclause C.3.3).

In an independent terminology deliverable, the concepts defined shall be restricted to the field corresponding to the scope of 3GPP. In other 3G TSs or 3G TRs, only such concepts shall be defined as are used in those 3G TSs or 3G TRs, apart from any additional concepts and their terms that may be deemed necessary for the understanding of these definitions.

#### C.1.4 Avoidance of duplications and contradictions

Before a term and a definition are established for a concept, it should be ascertained that no other term and definition for that concept exist in another 3G TS or 3G TR.

If the concept is used in several 3G TSs or 3G TRs, it should be defined in the most general of those standards, or in an independent terminology deliverable. The other 3G TSs or 3G TRs should then refer to this deliverable, without repeating the definition of the concept.

When the repetition of a definition is necessary, an informative reference shall be made to the document (3G TS or 3G TR or other) from which it is reproduced (see subclause 6.6.6.5).

If a term and a definition for a concept are established in one 3G TS or 3G TR, the introduction in another 3G TS or 3G TR of a different term (synonym) for the defined concept is strongly deprecated.



## C.1.5 Drafting of definitions

- A definition shall not take the form of, or contain, a requirement.
- The form of a definition shall be such that it can replace the term in context. Additional information shall be given only in the form of examples or notes (see subclause C.3.9).
- A definition given without an indication of its applicability may be taken as representing the general meaning of the term. Special meanings in particular contexts shall be indicated by designating the subject field (see Subclause C.3.6).

---

## C.2 Independent terminology deliverables

### C.2.1 Arrangement

An independent terminology deliverable containing terms and definitions should be preferably classified according to the hierarchy of the concepts. The terms and definitions of general concepts shall precede those of less general concepts. If a mixed system of concepts is used in which several groupings (according to different criteria) appear, each grouping shall be kept separate and the relevant criteria shall be indicated.

The grouping of terms shall be evident from their numbering.

### C.2.2 Languages other than official languages

Void.

---

## C.3 Presentation

### C.3.1 Rules

Void.

### C.3.2 Layout

The preferred term (set in bold type) shall be placed on a new line, (after its reference number, if used), starting with a lower-case letter except for any capital letters required by the normal written form in running text. The definition shall follow, after a colon and a space.

EXAMPLE:

**delamination:** separation of two adjacent plies resulting from a lack of adhesion

### C.3.3 Synonyms

Admitted terms (set in normal type in the printed publication) shall each be placed on a new line, after the preferred term.

EXAMPLE 1:

**serializer;** parallel-serial converter dynamicizer: functional unit that converts a set of simultaneous signals into a corresponding time sequence of signals

Symbols shall be given following any admitted term(s).

Information regarding the units applicable to a quantity shall be given in a note.

EXAMPLE 2:

**resistance; R:** electric difference divided by current when there is no electromotive force in the conductor

NOTE: Resistance is expressed in ohms.

Deprecated, obsolete and superseded terms (in normal type) shall each be placed after the recommended term, after any symbols, and shall be followed by an indication of their status, in parentheses.

EXAMPLE 3:

**radix;** base (deprecated): positive integer by which the weight of any digit place is multiplied to obtain the weight of the digit place with the next higher weight

### C.3.4 Grammatical form of terms

Terms shall in general be presented in their basic grammatical form, i.e. nouns in the singular, verbs in the infinitive.

### C.3.5 Symbol for missing terms

Void.

### C.3.6 Multiple meanings

If a term is used to represent several concepts, the subject field to which each concept belongs shall be indicated between angle brackets, before the definition.

EXAMPLE:

**die,** noun: [extrusion] metal block with a shaped orifice through which plastic material is extruded

**die,** noun: [moulding] assembly of parts enclosing the cavity from which the moulding takes its form

**die,** noun: [punching] tool to punch sheet or film material

### C.3.7 Codes for countries and for languages

Void.

### C.3.8 Parentheses and brackets

Parentheses and square brackets shall be used only if they constitute part of the normal written form of the term. They shall not be used to show alternative terms.

EXAMPLE:

**bis(dimethylthiocarbamyl) disulfide**

### C.3.9 Examples and notes

Examples of term usage, and notes concerning entries, shall be presented as shown below.

**radix**; base (deprecated): [radix numeration system] positive integer by which the weight of any digital place is multiplied to obtain the weight of the digit place with the next higher weight

EXAMPLE: In the decimal numeration system the radix of each digit place is 10.

NOTE: The term "base" is deprecated in this sense because of its mathematical use.

---

## Annex D (normative): Drafting of the title of a 3G TS or 3G TR

### D.1 Elements of the title

#### D.1.1 The introductory element

See subclause 6.1.1.

#### D.1.2 The main element

The main element shall always be included.

#### D.1.3 The complementary element

The complementary element is necessary if the 3G TS or 3G TR covers only one or a few aspects of the subject indicated in the main element.

Experience has shown that the titles of most deliverables benefit from the precision supplied in the complementary element.

In the case of a 3G TS or 3G TR published as a series of parts, the complementary element shall serve to distinguish and identify the parts (the introductory element and the main element remaining the same for each part).

The complementary element shall be omitted if the 3G TS or 3G TR both:

- covers all essential aspects of the subject indicated in the main element; and
- is (and is intended to remain) the only 3G TS or 3G TR relating to this subject.

---

### D.2 Avoidance of unintentional limitation of the scope

The title shall not contain details that might imply a limitation of the scope of the 3G TS or 3G TR.

However, if the 3G TS or 3G TR pertains to a specific type of product, this fact shall be reflected in the title.

---

### D.3 Wording

Void.

## Annex E (normative): Verbal forms for the expression of provisions

NOTE: Only singular forms are shown.

The verbal forms shown in table E.1 shall be used to indicate requirements strictly to be followed in order to conform to the standard and from which no deviation is permitted.

**Table E.1: Requirement**

Verbal form	Equivalent expressions for use in exceptional cases (see subclause 6.1.1.3)
<b>shall</b>	is to is required to it is required that has to only ... is permitted it is necessary
<b>shall not</b>	is not allowed [permitted] [acceptable] [permissible] is required to be not is required that ... be not is not to be
Do not use "must" as an alternative for "shall". (This will avoid any confusion between the requirements of a standard and external statutory obligations). Do not use "may not" instead "shall not" to express a prohibition. To express a direct instruction, for example referring to steps to be taken in a test method, use the imperative mood in English (e.g. "switch on the recorder").	

The verbal forms shown in table E.2 shall be used to indicate that among several possibilities one is recommended as particularly suitable, without mentioning or excluding others, or that a certain course of action is preferred but not necessarily required, or that (in the negative form) a certain possibility or course of action is deprecated but not prohibited.

**Table E.2: Recommendation**

Verbal form	Equivalent expressions for use in exceptional cases (see subclause 6.1.1.3)
<b>should</b>	it is recommended that ought to
<b>should not</b>	it is not recommended that ought not to

The verbal forms shown in table E.3 are used to indicate a course of action permissible within the limits of the 3G TS or 3G TR.

**Table E.3: Permission**

Verbal form	Equivalent expressions for use in exceptional cases (see subclause 6.1.1.3)
<b>may</b>	is permitted is allowed is permissible
<b>need not</b>	it is not required that no ... is required
Do not use "possible" or "impossible" in this context. Do not use "can" instead of "may" in this context.	
NOTE: "May" signifies permission expressed by the standard, whereas "can" refers to the ability of a user of the standard or to a possibility open to him.	

The verbal forms shown in table E.4 are used for statements of possibility and capability, whether material, physical or causal.

**Table E.4: Possibility and capability**

Verbal form	Equivalent expressions for use in exceptional cases (see subclause 6.1.1.3)
<b>can</b>	be able to there is a possibility of it is possible to
<b>cannot</b>	be unable to there is no possibility of it is not possible to
Do not use "possible" or "impossible" in this context. Do not use "can" instead of "may" in this context.	
NOTE: "May" signifies permission expressed by the standard, whereas "can" refers to the ability of a user of the standard or to a possibility open to him.	

The verbal forms shown in table E.5 shall be used to indicate behaviour of equipment or sub-systems outside the scope of the document in which they appear. For example, in a standard specifying the requirements of terminal equipment, these forms shall be used to describe the expected behaviour of the network or network simulator to which the terminal is connected.

**Table E.5: Inevitability**

Verbal form	Equivalent expressions
<b>will</b>	
<b>will not</b>	
Distinguish from "shall" / "shall not". Use to express behaviour of equipment or systems <i>outside</i> the scope of the document being drafted, where description of such behaviour is essential to the correct understanding of the requirements pertaining to equipment <i>within</i> the scope of the current document.	

EXAMPLE: Extract from standard specifying behaviour of terminal equipment: "... On expiry of timer T3, the terminal shall send a TIMEOUT message to the network and start timer T4. The network will respond with a TIMEOUT-ACKNOWLEDGE message. On receipt of a TIMEOUT-ACKNOWLEDGE message, the terminal shall stop timer T4 ..."; thus is distinguished the strong future ("the terminal shall") used for requirements and the normal future ("the network will") used to indicate expected events.

The verbal forms shown in table E.6 shall be used to indicate statements of fact.

**Table E.6: Fact**

Verbal form	Equivalent expressions
<b>is</b>	Any verb in the indicative mood, present tense.
<b>is not</b>	
Distinguish from "shall" / "shall not". Do not use present indicative of verbs for expressing requirements.	

---

Annex F (informative):  
Checklist concerning quantities and units to be used in 3G  
TSs or 3G TRs

Void.

---

Annex G (informative):  
Example layout of a typescript

Void.

# Annex H (informative): 3GPP styles and various information

## H.1 The 3GPP styles

Use table H.1 when determining which style to use for various elements of the deliverable.

**Table H.1**

Use this style	For this type of element
<b>Heading 1</b>	Clause (→ if numbered)
<b>Heading n</b>	Subclause level n In exceptional cases, for level 6 or beyond, use <b>Heading 5</b> if required in contents list or <b>H6</b> if not to appear. →
<b>Heading 8</b>	Annex title for TS
<b>Heading 9</b>	Annex title for TR
<b>Normal</b>	Standard paragraph, Definition
<b>EX</b>	Reference, Example →
<b>EW</b>	Symbol, Abbreviation, Example continuation in text →
<b>Bn</b>	List element level n →
<b>FP</b>	Free paragraph (left justified)
<b>NO</b>	Note integrated in the text →
<b>NW</b>	Note continuation in text →
<b>NF</b>	Note in figure →
<b>TAN</b>	Note in table →
<b>TH</b>	Table title, Figures
<b>TAH</b>	Heading within table
<b>TAC</b>	Centred text within table
<b>TAL</b>	Left justified text within table
<b>TAR</b>	Right justified text within table
<b>TF</b>	Figure title
<b>TT</b>	Contents list title
<b>PL</b>	Programming language
<b>EQ</b>	Equation
<b>Header</b>	Header (portrait and landscape pages)
→ use "tab" between "item/number" and "text". EXAMPLE: The "tab" is preceding this example text.	

Other styles exist in the template, but are for use by the Secretariat only.

## H.2 Page numbering, page headers and footers

The skeleton document supplies fields for automatic page numbering and the identification of the deliverable in the page header. Do not add anything to or delete anything from the headers.

- Use the **HEADER** style on all page headers (sections) except for the title page (section)



## H.3 Configuration of the Windows environment

Set your Windows environment to use the English (International) conventions (via Control Panel, International).

- Use centimetres as the preferred unit of measurement.
- Do *not* select "Change 'Straight Quotes' to 'Smart Quotes'" in the AutoCorrect options.
- Set Default Tab Stops to 0,5 cm.
- The remaining configurable elements of Windows and of Word are at your discretion.

## H.4 Sequence numbering

You may use sequence numbering (**Insert Field Seq**) for tables, figures, equations, references, etc. Use the sequence identifiers shown in the following table.

**Table H.2: Sequence numberings**

Sequence	Bookmark name	Description
seq bib	bib_xx	for bibliography entries
seq equ	equ_xx	for equations (note 1)
seq fig	fig_xx	for figures (note 1)
seq ref	ref_xx	for references
seq tab	tab_xx	for tables (note 1)
NOTE 1: Reset the sequence numbering to one for the first item of each annex of a 3G TS or 3G TR by using the switch <b>vr1</b> (e.g. <b>{ seq fig vr1 }</b> ).		
NOTE 2: "xx" represents the identifier for the particular object concerned, e.g. fig_ProcessControl. Do not use bookmarks of the form "fig_fig1". You can use underscores as separators in sequence identifiers if necessary.		

Thus the title of a table will read:

**Table { seq tab }:** Table title

where the *italic* part represents the sequence field code.

Bookmark each entry in a sequence (select it and use **Edit Bookmark Add**), using a bookmark name of the form shown in table 1. You can then refer to the table, figure, reference, etc. from the text by inserting a sequence field citing the same sequence identifier and the particular bookmark required. For example, table 1 has been bookmarked "tab\_Seq\_Num". Thus a reference to this table from the text reads:

... see table { seq tab tab\_Seq\_Num } ...

where the *italic* part represents the sequence field code.

You can force Word to recalculate and refresh the display of sequence numbers and their references by selecting the text and pressing F9.

**Do not** use Word's cross-referencing tool (Insert, Cross-reference), since it implies the use of automatic heading or caption numbering.

## H.5 Supported file formats

Software tools to be used for document development within 3GPP are detailed in table H.1

Table H.1: Permitted software tools

Type	Tool(s)	Comments
Text	Microsoft Word 97 (SR-2)	
Graphics	Micrografx Designer version 3.x or 6.0 or 7.0 (preferred)	
	MS Draw 98	Freeware from Microsoft. The built-in drawing package of Word is not recommended. All other graphical formats are treated as bitmaps which cannot be modified.
SDL, MSC,	Telelogic SDT version 3.2	Rapporteurs can obtain this software on loan from the 3GPP Secretariat. Individual SDL diagrams should be exported from STD as Encapsulated Postscript™ files.
TTCN	Telelogic ITEX version 3.4	
Databases	Microsoft Access 97 (SR-2)	
General Tools	Microsoft Office 97 software Suite (Excel 97, Powerpoint 97, etc.)	

---

## H.6 Quick tips to working with your document

When working with your 3G TS or 3G TR remember you may...

### ... do this...

- use **bold** to **emphasize** text;
- use *italic* for citations, linguistic expressions or when a word/text/expression is extracted from a specific context;
- use non-breaking spaces (°) or hyphens (—) in order to avoid unexpected wrap around between two words and/or numbers (e.g. 50°cm, 1°000, clause°6, annex°A, table°1, figure°1, TR°21°801—1, etc.). These characters appear as normal spaces ( ) or hyphens (-) when printed out;
- use the default tab stops 0,5 cm for the new regime deliverables and 1 cm for old regime deliverables;
- use "straight" quotation marks ("...") not "curly" or "smart" (“...”) ones. If a second set of quotations is needed (e.g. GDMO, ASN.1, etc.), single quotes ('...') may be used.

### ... but please don't do this ...

- alter existing styles or formats pre-set in the 3GPP template;
- add new styles to the 3GPP template;
- delete 3GPP styles;
- use a font other than the one pre-set in the 3GPP styles;
- use the underline attribute, as this causes confusion when revision marks are used;
- put more than one space after a full stop;
- precede comma (,), semicolon (;), colon (:), full stop (.), question mark (?) or exclamation mark (!) by spaces;
- use spaces in place of tabs when indentation/alignment is required; this can cause text to be misaligned;
- use footnotes or end-notes;
- do not unnecessarily use capital letters.

---

## Annex I (normative): Text containing SDL, program code, ICS and TTCN

### I.1 SDL diagrams

Provide SDL diagrams in SDT binary files or as CIF files when not using SDT.

When using SDT use the .ini file supplied on the 3GPP server.

Take into account the following when inserting SDL diagrams in Word documents

- Do not include SDL headers or footers.
- Insert SDL diagrams by importing individual embedded Postscript™ (.eps) files generated from the SDL tool that you are using.

---

### I.2 Program code

Large volumes of program code, source code or formal description language shall be placed in a separate file.

---

### I.3 Implementation Conformance Statement (ICS) proforma tables

(For further study.)

---

### I.4 Tree and Tabular Combined Notation (TTCN)

Provide TTCN as a separate file.

Provide both Graphical Rendition (GR) and Machine Processable (MP) files.

The following text should be used for ATs using TTCN. The subdivision is recommended.

*This ATs has been produced using the Tree and Tabular Combined Notation (TTCN) according to ISO/IEC 9646-3 [<x>].*

*The ATs was developed on a separate TTCN software tool and therefore the TTCN tables are not completely referenced in the table of contents. The ATs itself contains a test suite overview part which provides additional information and references.*

**<x1> The TTCN Graphical form (TTCN.GR)**

*The TTCN.GR representation of this ATs is contained in a Portable Document Format file (<filename>.PDF contained in archive <filename>.ZIP) which accompanies the present document.*

**<x2> The TTCN Machine Processable form (TTCN.MP)**

*The TTCN.MP representation corresponding to this ATs is contained in an ASCII file (<filename>.MP contained in archive <filename>.ZIP) which accompanies the present document.*

*NOTE: According to ISO/IEC 9646-3 [<x>], in case of a conflict in interpretation of the operational semantics of TTCN.GR and TTCN.MP, the operational semantics of the TTCN.GR representation takes precedence."*

---

## Annex J (normative): Endorsement of documents from other standards organizations

### J.1 General

In the case that a 3G TS or 3G TR would become almost identical to (i.e., with or without modifications use the entirety of) a document from another standards organization, the TSG may decide to prepare a 3G TS or 3G TR defining only the differences, if any, between that document (commonly called "endorsed document") and the 3G TS or 3G TR.

Such a 3G TS or 3G TR, commonly called "endorsement", shall be drafted in accordance with the present document, with the exceptions defined below.

---

### J.2 Title

If the endorsed document is referred to without modifications, the title of the 3G TS or 3G TR should be as close as possible to the title of the endorsed document, but comply with the provisions of annex D.

EXAMPLE 1:

Endorsement of ITU-T Recommendation Q.1215 (1993): "Physical plane for intelligent network CS-1", gives the 3G TS or 3G TR the title:

**Intelligent Network (IN);  
Physical plane for intelligent network Capability Set 1 (CS1)**

[ITU-T Recommendation Q.1215 (1993)]

If the endorsed document is referred to with textual (technical and/or editorial) modifications, the title of the 3G TS or 3G TR shall indicate that.

EXAMPLE 2:

Endorsement of ITU-T Recommendation G.957 (1993): "Optical interfaces for equipments and systems relating to the synchronous digital hierarchy", gives the 3G TS or 3G TR the title:

**Transmission and Multiplexing (TM);  
Optical interfaces for equipments and  
systems relating to the Synchronous Digital Hierarchy (SDH)**

[ITU-T Recommendation G.957 (1993), modified]

---

### J.3 Requirements

This element is mandatory and shall be entitled "Endorsement notice".

If the endorsed document is referred to without modifications, the following text should be used:

*"All elements of .... apply."*

If the endorsed document is referred to with modifications, the following text should be used:

*"The elements of .... apply, with the following modifications:"*

The modifications shall be presented in an order following the sequence of clauses of the endorsed document. General modifications shall precede specific modifications.

- The use of revision marks for the presentation of the modifications is recommended.

---

## J.4 Annex

Designation of the serial order of an annex shall be with two letters, the first letter always being Z (i.e. ZA, ZB, ZC, etc.), in order to avoid confusion with any annexes of the endorsed document.

---

## Annex K (informative): Change history

Change history					
TSG SA #	Version	CR	Tdoc SA	New Version	Subject/Comment
May 2000				0.0.0	First draft, internal to MCC.
June 2000	0.0.0			1.0.0	Editorial Clean up
SA_08	1.0.0			1.0.1	Presentation to SA#8