

## ETSI drafting rules

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**Reference**RSR/BOARD-00002

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**Keywords**

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**ETSI**

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## Foreword

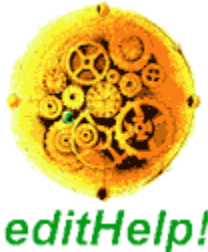
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Items concerning word-processor specific layout and formatting matters when using the Microsoft Word for Windows<sup>®</sup> based ETSI skeleton documents and templates are shown with **shaded** background. Boiler plate text (i.e. text which shall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

The following significant changes have been made since V1.2.1:

- clauses of the present document have been renumbered for grouping items on the same subject under one clause instead of spreading the information in various places;
- the word "must" in ETSI deliverables is allowed;
- for normative references, which are essential to use the ETSI deliverable, clause 2 shall be used. Public availability of those references is verified;
- normative references in a Candidate Harmonized Standard shall always be **published and specific** (clauses 12.1 and E.3 have been added);

NOTE: A free-standing HTML version of the present document is available from:  
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# 1 Scope

The present document specifies rules for the structure and drafting of documents intended to become ETSI deliverables. These rules complement the ETSI Technical Working Procedures (TWP) and are intended to ensure that such documents are drafted in as uniform a manner as is practicable, irrespective of the technical content.

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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.

ETSI Directives: "ETSI Statutes; ETSI Rules of Procedure; ETSI Board Working Procedures; Powers and Functions of the Board; Terms of Reference of the Operational Co-ordination Group (OCG); ETSI Technical Working Procedures".

ETSI TCR-TR 006: "Advanced Testing Methods (ATM); ETSI and certification in telecommunications; Overview of outstanding issues and some recommendations".

ETSI EG 201 058: "Methods for Testing and Specification (MTS); Implementation Conformance Statement (ICS) proforma style guide".

ETSI SR 001 470: "Guidance to the production of candidate Harmonized Standards for application under the R&TTE Directive (1999/5/EC); Pro-forma candidate Harmonized Standard".

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# 3 Definitions and abbreviations

## 3.1 Definitions

For the purposes of the present document, the terms and definitions given in the ETSI Directives and the following apply:

**informative elements:** elements that provide additional information intended to assist the understanding or use of the ETSI deliverable

**informative reference:** references that are not essential to the use of the ETSI deliverable but that assist the user with regard to a particular subject area

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

**normative elements:** elements setting out the provisions to which it is necessary to conform in order to be able to claim compliance with the ETSI deliverable

**normative reference:** references that are essential to the use of the ETSI deliverable, i.e. without which the deliverable cannot be implemented

**provision:** expression in the content of an ETSI deliverable, that takes the form of a statement, an instruction, a recommendation or a requirement

NOTE 1: 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 clause 23).

**publicly available:** in the context of referencing documents within ETSI deliverables, a document that may be obtained from the source organization by any person (with or without payment), simply by quoting the reference given in the ETSI deliverable to the source organization or other typical supplier (e.g. National Standards Organization, Library,...)

NOTE 2: ETSI deliverables are made publicly available during the various stages of the relevant approval procedures prior to publication and at the point of publication. Thus, for ETSI deliverables, public availability is a broader concept than publication. The specific status of a publicly available ETSI deliverable may be determined by examining its History clause.

This may also be true of other standardization bodies whose documents are referenced by ETSI and this is taken into account during the preparation of ETSI deliverables.

EXAMPLE: A Public Enquiry version of an ETSI deliverable is made publicly available by ETSI and therefore fulfills the above definition.

**published:** a specific case of public availability for an ETSI deliverable, occurring when all relevant approval procedures have been successfully completed

NOTE 3: A published deliverable may be identified by examining the History clause of the document in question. The last line in the History box will contain the word "Publication".

**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 following abbreviations apply:

ASCII	American Standard Code for Information Interchange
ASN.1	Abstract Syntax Notation no. 1
CIF	Common Interchange Format
EN	European Standard (telecommunications series)
ES	ETSI Standard
ETS	European Telecommunication Standard
GDMO	Guidelines for the Definition of Managed Objects
GR	Graphical Rendition
ICS	Implementation Conformance Statement
IPR	Intellectual Property Rights
MP	Machine Processable
PDF	Portable Document Format
SDL	Specification and Description Language
SDT	SDL Development Tool
SR	ETSI Special Report
TR	ETSI Technical Report
TS	ETSI Technical Specification
TTCN	Tree and Tabular Combined Notation



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## 4 General principles

### 4.1 Objective

The objective of an ETSI deliverable is to define clear and unambiguous provisions in order to facilitate international trade and communication. To achieve this objective, the ETSI deliverable 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 ETSI deliverable, but also within a series of associated ETSI deliverables. The structure of associated ETSI deliverables 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 ETSI deliverable or series of ETSI deliverables 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 ETSI deliverable but also to derive the maximum benefit available through automated text processing techniques.

### 4.3 Consistency of ETSI deliverables

In order to achieve the aim of consistency within the complete body of ETSI deliverables, the text of every ETSI deliverable shall be in accordance with the relevant provisions of existing basic ETSI deliverables. 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 ETSI deliverables dealing with the following subjects shall be respected:

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

## 4.4 Equivalence of official language versions

ETSI deliverables shall be in the English language only.

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

The content of an ETSI deliverable 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 (see ETSI Rules of Procedure, article 13.7).

## 4.6 Planning

Rules for the planning of new work items are given in the ETSI Directives. When creating a new work item, it is useful to consider whether the end result will be one or more ETSI deliverables (for example, a multi-part standard). In the case where multiple deliverables are expected, some thought should be given to the intended structure and any interrelationships between the various components as this facilitates work planning in both the Technical Body and in the Secretariat.

In the case of a multi-part ETSI deliverable, a list of the intended parts together with their titles should be drawn up. The drafting 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 Legal master of an ETSI deliverable

ETSI deliverables are made publicly available by ETSI in PDF format. Other formats may also be available.

From a legal point of view, the official version of a document is the one which is recognized by the author as being the definitive and mature version of his/her work at a certain date. The official version of a document constitutes a reference from which it is possible to identify that amendments have been made.

In ETSI, the definitive version of an ETSI deliverable (until further amendments are made) is the one that has been checked by the Secretariat and incorporates the amendments resulting from the Approval process prescribed for the ETSI deliverable in the Technical Working Procedures. These versions have been for a long time the paper versions of the ETSI deliverables, since the documents were not available entirely in electronic format. When the Secretariat has ensured that the ETSI deliverables produced are available in PDF format, the official version of the ETSI deliverable is the electronic PDF file kept in ETSI.

However, the information contained in an electronic file is not directly visible, and becomes only visible for the public when the file is either opened on the computer screen or when the file is printed. Therefore, it can be said that the official versions of the ETSI deliverables, which are entirely produced in electronic format, are the printed version on ETSI printers of the PDF files, which are kept at a specific location in the ETSI Secretariat.

In case of a complaint for a mistake included in an ETSI deliverable, the legal reference would so far be the paper version of the ETSI deliverable kept in ETSI, or the printing of the PDF version of the ETSI deliverable kept by ETSI.

## 5 Structure

### 5.1 Subdivision of the subject matter

#### 5.1.1 General

ETSI deliverables 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 ETSI deliverable 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 ETSI deliverable is likely to become too voluminous;
- subsequent portions of the content are interlinked;
- portions of the ETSI deliverable could be referred to in regulations; or
- portions of the ETSI deliverable are intended to serve for certification purposes,

the ETSI deliverable 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 an ETSI deliverable or as separate ETSI deliverables.

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 an ETSI deliverable may have are shown in table 1.

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

Term	Example of numbering
part	ES 201 111-1
sub-part	ES 201 111-1-2
clause	1
clause	1.1
clause	1.1.1
annex	A
clause	A.1
clause	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 edition. There are two ways to achieve this:

- If reference is made to a particular element, the reference shall be specific (see clause 12.4).
- Since the complete series of parts is normally under the control of the same Technical Body, the use of non-specific references (see clause 12.5) is permitted, provided that corresponding changes are implemented simultaneously in all parts.

### 5.1.3 Subdivision of the subject matter within an individual ETSI deliverable

**Table 2: Example of a typical arrangement of elements in an ETSI deliverable**

Type of element	Arrangement of elements in an ETSI deliverable (note)	Permitted content of element(s) in an ETSI deliverable (note)	Reference
Informative preliminary	<b>Title page</b>	<b>Title</b>	clause 6
	<b>Table of contents</b>	<i>(generated content)</i>	clause 7
	<b>Intellectual Property Rights</b> <b>Foreword</b> <b>Transposition</b>	<b>Text</b> <i>Note(s)</i> <i>Table</i>	clause 8 clause 9 clause 9a
	<i>Introduction</i>	<i>Text</i> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>	clause 10
Normative general	<b>Scope</b>	<b>Text</b> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>	clause 11
	Reference(s)	Reference(s)	clause 12
Normative technical	Definition(s) Symbols and abbreviations Requirements : Normative annex	Text <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>	clause 13 clause 14 clause 15  clause 16.2
	<i>Informative guidance</i> <i>Informative annex</i>	<i>Text</i> <i>Figure(s)</i> <i>Table(s)</i> <i>Note(s)</i>	clause 16.3
Informative supplementary	<i>Bibliography</i>	<i>Informative reference(s) and reading material</i>	clause 17
	<i>Index</i>	<i>(generated content)</i>	clause 18
	<b>History</b>	<i>Table</i>	clause 19
NOTE: <b>Bold type</b> = required element; upright type = normative element; <i>italic type</i> = informative element.			

An ETSI deliverable 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 ETSI deliverable in question.

An ETSI deliverable may also contain notes to figures and tables (see clauses 20.3.1 and 20.3.2).

## 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 (limited to 2 digits), following the ETSI deliverable number and preceded by a hyphen, for example:

- ES 201 999-1, ES 201 999-2, EN 300 356-33, EN 300 356-34.

The number of a sub-part shall be indicated by Arabic numerals, beginning with 1-1 (limited to 2 digits), following the ETSI deliverable number and preceded by a hyphen, for example:

- ES 201 999-1-1, ES 201 999-1-2, EN 300 356-33-10, EN 300 356-33-11.

### 5.2.1a General numbering issues

The "IPR" clause, the "Foreword" clause and the "Introduction" clause (optional) shall be unnumbered.

The clauses in each ETSI deliverable shall be numbered with Arabic numerals, beginning with 1 for the "Scope".

Every attempt shall be made to use continuous numbering. 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, annex, figure, table, note, list).

**EXAMPLE 1:** It is necessary to update an ETSI deliverable. 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.

**EXAMPLE 3:** During the updating of an ETSI deliverable, it is decided that annex C is no longer required. The title of annex C 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

Each clause shall have a title which shall be placed after its number (except "IPR", "Foreword" and "Introduction" clauses, which are unnumbered), separated by a tab.

A clause can have numbered subdivisions, e.g. 5.1, 5.2, 5.1.1, 5.1.2 etc. This process of subdivisions may be continued as far as the sixth heading level (e.g. 6.5.4.3.2.1).

For numbering see 5.2.1a.

Treat clause titles as normal text (i.e. no additional capitalization), **but** no full stop.

- Use the **Heading** style appropriate to its level (see table A.1).
- Separate the number of the heading and the text of the heading with a tab.

### 5.2.3 Automatic numbering

Automatic numbering **shall not be used** in ETSI deliverables as errors occur when the deliverable is converted to PDF format. 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 ETSI Secretariat.

It is recommended to use sequence numbering (see clause A.4).

A deliverable in which the Microsoft Word for Windows<sup>®</sup> cross-referencing tool (Insert, Cross-reference) has been used (which implies the use of automatic heading or caption numbering) **will be returned to the Rapporteur by the ETSI Secretariat**.

**Reason:** The ETSI Secretariat has to remove the automatic numbering to be able to convert to PDF format and therefore loses the cross referencing. The re-constitution would be a potential source of errors in the deliverable and would create serious delays within the editing department.

## 5.2.4 Paragraph

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

EXAMPLE 1: In the following example the hanging paragraphs indicated cannot be uniquely identified as being in "clause 5" since strictly speaking the paragraphs in clauses 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 clause "5.1 XXXXXXXXXXXX" and to renumber the existing 5.1 and 5.2 accordingly (as shown), or to move the hanging paragraphs elsewhere.

Recommended	Not recommended
<p><b>5 Title</b></p> <p><b>5.1 Title</b></p> <p>This text can be referred to without any ambiguity.</p> <p><b>5.2 Title</b></p> <p>This text can also be referred to without any ambiguity.</p> <p><b>5.3 Title</b></p> <p>This text can also be referred to without any ambiguity.</p> <p><b>6 Test report</b></p>	<p><b>5 Title</b></p> <p>This text can not be referred to } in a precise manner as clause 5 } hanging paragraphs also has subdivisions }</p> <p><b>5.1 XXXXXXXXXXXX</b></p> <p>This text can be referred to without any ambiguity.</p> <p><b>5.2 XXXXXXXXXXXX</b></p> <p>This text can also be referred to without any ambiguity.</p> <p><b>6 Test report</b></p>

EXAMPLE 2: In the following example an acceptable hanging paragraph is shown.

Acceptable
<p><b>5 Title</b></p> <p>The following clauses define aaa, bbb and ccc (see note).</p> <p><b>5.1 aaa</b></p> <p>This text about "aaa" can be referred to without any ambiguity.</p> <p><b>5.2 bbb</b></p> <p>This text about "bbb" can be referred to without any ambiguity.</p> <p><b>6 Test report</b></p>
NOTE: There is no need for reference to this text.

## 5.2.5 Lists

Lists may be introduced by a sentence, a complete grammatical proposition or by the first part of a proposition, completed by the items in the list.

Each item in a list shall be preceded by a bullet, a dash, an Arabic numeral followed by a parenthesis, or a lower case letter followed by a parenthesis.

## EXAMPLE 1:

- list item 1
- list item 2
- list item 3

## EXAMPLE 2:

- list item 1;
- list item 2;
- list item 3.

## EXAMPLE 3:

- list item 1,
- list item 2,
- list item 3.

## EXAMPLE 4:

- 1) List item 1
- 2) List item 2
- 3) List item 3

## EXAMPLE 5:

- a) List item a.
- b) List item b.
- c) List item c.

NOTE: See table A.1 for different list styles.

If you use punctuation, respect the following rules:

- 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 of the penultimate element of a list to indicate unambiguously whether all the elements apply ("and") or whether they are mutually exclusive ("or").

- Use the appropriate bullet styles, i.e. styles **B1** to **B5** or **B1+**, **B2+**, **B3+**, **BN**, **BL** (see table A.1).
- Separate the list item identifier (e.g. bullet) and the text with a tab (if using styles **B1** to **B5**, the others are automatic bullet styles containing the space).
- Ensure that the formatting of the lists is consistent throughout the deliverable.

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## 6 Contents of the title page

The title page shall contain the title of the ETSI deliverable.

The wording of the title shall be established by the Technical Body with the greatest care. While being as concise as possible, it shall indicate, without ambiguity, the subject matter of the ETSI deliverable in such a way as to distinguish it from that of other ETSI deliverables, 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 (optional) indicating the general field to which the ETSI deliverable belongs; it should not be based on the name of the Technical Body which drafted the deliverable, especially if this is too broad to add much value;
- 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 ETSI deliverable from other ETSI deliverables, or other parts of the same ETSI deliverable.

The ETSI 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 ...." and "Sub-part ....".

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

---

## 7 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\w}` for the table itself.

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

---

## 8 Intellectual Property Rights (IPRs)

The "Intellectual Property Rights" clause in an ETSI deliverable is always the first unnumbered clause.

All published ETSI deliverables shall include information pertaining to essential IPRs which are brought to the attention of ETSI prior to such publication. This element is provided by the Technical Body responsible for drafting the ETSI deliverable.

As a minimum, the "IPRs" clause shall contain an indication how to retrieve information pertaining to essential IPRs brought to the attention of ETSI. This element is provided by the Secretariat.



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## 9 Foreword in an ETSI deliverable

The "Foreword" clause in an ETSI deliverable is always the second unnumbered clause.

The "Foreword" shall appear in each ETSI deliverable. It shall not contain requirements, figures or tables, except for the transposition table (see clause 9a).

It consists of a general part, provided by the ETSI Secretariat, giving information on:

- the designation and name of the Technical Body that prepared the ETSI deliverable; and
- information regarding the approval of the ETSI deliverable.

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.

Optionally, a specific part that is provided by the Technical Body may give as many of the following as are appropriate:

- an indication of any other organization that has contributed to the preparation of the ETSI deliverable;
- a statement that the ETSI deliverable cancels and replaces other documents in whole or in part;
- a statement of significant technical changes from the previous version of the ETSI deliverable;
- the relationship of the ETSI deliverable to other ETSI deliverables or other documents.

---

### 9a Transposition table

Each European Standard (EN, telecommunications series) shall contain a transposition table as the last element in the Foreword. This element is provided by the Secretariat and its purpose is described in the ETSI Technical Working Procedures, clause 2.4.

---

## 10 Introduction in an ETSI deliverable

The "Introduction" is an optional preliminary element used, if required, to give specific information or commentary about the technical content of the ETSI deliverable, and about the reasons prompting its preparation. It shall not contain requirements.

The "Introduction" shall appear after the "Foreword" and not be numbered unless there is a need to create numbered subdivisions. In this case, it shall be numbered 0 with clauses being numbered 0.1, 0.2, etc. Any numbered figure, table or displayed formula shall be numbered normally beginning with 1 (see also clause 5.2.1a).

---

## 11 Scope in an ETSI deliverable

This element shall be clause 1 of each ETSI deliverable and define without ambiguity the subject of the ETSI deliverable and the aspect(s) covered, thereby indicating the limits of applicability of the ETSI deliverable 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 ETSI deliverable shall be introduced by the following wording:

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

## 12 References in an ETSI deliverable

For the ETSI deliverable type "Technical Report", see clause 12.2.

References shall be provided if normative references are made to other documents. References shall be given to Standards, Recommendations or Technical Specifications issued by recognized standardization bodies or to Directives issued by the European Commission.

Normative referencing of other documents is allowed under the following condition:

- all documents shall be publicly available in the English language during the approval phases and at the time of publication of the ETSI deliverable, via the originating body or via the ETSI Secretariat.

NOTE: If public availability cannot be guaranteed after publication has occurred, the originating body of the document shall be requested to provide ETSI with the right to make available the text; the ETSI 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.

**Normative** references shall be listed in clause 2.

**Normative** references shall contain:

- the document identity;
- the edition or version number (if the reference is to be specific);
- the issuing organization;
- the title.

If **normative** references cited in a deliverable are not publicly available during the drafting stage the deliverable shall not be submitted to an approval procedure until the reference is publicly available. Or the text shall be made available.

**Informative** references shall be listed in an informative annex entitled Bibliography (see clause 17). For a Technical Report, see clause clause 12.2.

**Informative** references should be publicly available (but no check will be made).

The distinction between normative and informative references must be made by the wording of the passage of the **document which refers to it**, not by the **referenced document itself**.

EXAMPLE:    **"the test method shall be as described in ITU-T Recommendation M.50"**,  
then ITU-T Recommendation M.50 must appear as a **normative** reference.

**"the test method is described in ITU-T Recommendation M.50"**,  
then ITU-T Recommendation M.50 is an **informative** reference.

The list of normative references under clause 2 shall be introduced by the following wording:

## 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 and/or edition number or version number) or non-specific.*
- *For a specific reference, subsequent revisions do not apply.*
- *For a non-specific reference, subsequent revisions do apply.*

The list of normative references shall not include the following:

- informative references (such references may be listed in an annex entitled Bibliography);
- other reading material (such publications may be listed in an annex entitled Bibliography).
- Use the **EX** style, if using numbered references; enclose the number in square brackets and separate it from the title with a tab (you may use sequence fields for automatically numbering references, see clause A.4: "Sequence numbering") (see example 1).
- Use the **EX** style, if using square brackets containing identifications other than numbers; enclose the "identification" in square brackets and separate it from the title with a tab (see example 2).
- Use the **Normal** style, if not using numbered references (see example 3).

### EXAMPLE 1:

[1] ETSI ES 201 999 (V1.1.1): "Title".

[2] ETSI ETS 300 163 (1994): "Title".

### EXAMPLE 2:

[EG 201 212] ETSI EG 201 212: "Electrical safety; Classification of interfaces for equipment to be connected to telecommunication networks".

[EN 300 429] ETSI EN 300 429: "Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for cable systems".

### EXAMPLE 3:

ETSI ES 201 999 (V1.2.1): "Title".

ETSI ES 201 999: "Title".

ETSI ETS 300 163 (1994): "Title".

## 12.1 References in a candidate Harmonized Standard

References in a candidate Harmonized Standard shall always be published and specific.

## 12.2 Presentation of references in an ETSI Technical Report

A TR is entirely informative.

The list of references under clause 2 within a Technical Report shall be introduced by the following wording:

*For the purposes of this Technical Report (TR), the following references apply:*

- Use the **EX** style, if using numbered references; enclose the number in square brackets and separate it from the title with a tab (you may use sequence fields for automatically numbering references, see clause A.4: "Sequence numbering") (see example 1).
- Use the **EX** style, if using square brackets containing identifications other than numbers; enclose the "identification" in square brackets and separate it from the title with a tab (see example 2).
- Use the **Normal** style, if not using numbered references (see example 3).

EXAMPLE 1:

[1] ETSI ES 201 999 (V1.1.1): "Title".

[2] ETSI ETS 300 163 (1994): "Title".

EXAMPLE 2:

[EG 201 212] ETSI EG 201 212: "Electrical safety; Classification of interfaces for equipment to be connected to telecommunication networks".

[EN 300 429] ETSI EN 300 429: "Digital Video Broadcasting (DVB); Framing structure, channel coding and modulation for cable systems".

EXAMPLE 3:

ETSI ES 201 999 (V1.2.1): "Title".

ETSI ES 201 999: "Title".

ETSI ETS 300 163 (1994): "Title".

## 12.3 Presentation of informative references and other reading material

This list within an annex shall be introduced by the following clause heading:

Annex X (informative):

Bibliography

The Bibliography shall not include the following:

- normative references (such references shall be listed in clause 2).

- Use the **Normal** style or a bulleted style (e.g. B1+) and do not use numbered references. (If you want to refer to such a publication from the text use *(see annex X)* instead).

EXAMPLE 3:

ITU-T Recommendation X.200: "Title".

ISO/IEC 17875: "Title".

Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").

## 12.4 Specific references

Except as provided for in clause 12.5, references shall be specific (identified by date of publication, edition number, version number).

NOTE: The exception provided in clause 12.2 shall not apply for candidate Harmonized Standard.

## 12.5 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 ETSI deliverable;
- 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 ETSI deliverable (e.g. the referred to document is controlled by the same Technical Body as the referring one).

## 12.6 References to the ETSI deliverable as a whole in its own text

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

## 12.7 References to elements of text

Use, for example, the following forms:

- "in accordance with clause 3";
- "according to clause 3.1";
- "as specified in clause 3.1 b)";
- "details as given in clause 3.1.1";
- "see annex B";
- "the requirements given in clause B.2";
- "see the note in table 2";
- "see example 2 in clause 6.6.3";
- "see note 3 in clause 6.6.1";
- "see figure B.2 in clause 5.4".

If there is a need to refer to an unnumbered list item, the following formulation shall be used:

"as specified in clause 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.

References shall be made in the forms indicated in clauses 12.6 to 12.9 and shall not be made to page numbers.

## 12.8 References to tables and figures

Every table and figure included in the ETSI deliverable 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.

## 12.9 References to specific or unspecific references

Use one of the following forms consistently throughout the deliverable:

- " ... in accordance with ES 201 001, clause 3, ... ";
- " ... in accordance with ES 201 001 [n], clause 3, ... ";
- " ... in accordance with [ES 201 001], clause 3, ...".

---

# 13 Terms and definitions in an ETSI deliverable

This is an optional element giving definitions necessary for the understanding of certain terms used in the ETSI deliverable. The following introductory wording, modified as appropriate, shall be used:

*For the purposes of the present document, the terms and definitions given in ... and the following apply:*

- 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 below).

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.

- 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 starting with a lower case letter and no ending full-stop.
- Use the **Normal** style.

EXAMPLE:

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

**fast channel:** channel with low latency but higher BER in comparison to the slow channel  
In contrast to the slow channel, the fast channel is not interleaved.

---

## 14 Symbols and abbreviations in an ETSI deliverable

This is an optional element giving a list of the symbols and abbreviations necessary for the understanding of the ETSI deliverable. The following introductory wording, modified as appropriate, shall be used:

*For the purposes of the present document, the following {<symbols>|<abbreviations>} apply:*

This list shall contain all technical abbreviations and their corresponding full terms which are used within the ETSI deliverable.

This element, if it exists, shall 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 clause.

- Use the **EW** style (**EX** style for the last element in the list).
- Separate the abbreviation from the full term with a tab.

EXAMPLE:

dB	decibel
DDI	Direct Dialling-In, or direct dialling-in

---

## 15 Requirements and test methods

### 15.1 Requirements

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

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

A clear distinction shall be made between requirements, statements and recommendations (see also clause 23).

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

ETSI deliverables listing characteristics for which suppliers are required to state values that are not specified by the ETSI deliverable itself shall specify how such values are to be measured and stated.

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

### 15.2 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 clause 16.1) or as separate parts (see clause 5.2.1). A test method shall be prepared as a separate ETSI deliverable if it is likely to be referred to in a number of other ETSI deliverables.

The need for specification of test methods shall be evaluated on a case by case basis, in accordance with TCR-TR 006.

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

Every requirement of an ETSI deliverable 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.

## 16 Annex in an ETSI deliverable

### 16.1 General

For the description of normative and informative annexes, see clauses 16.2 and 16.3.

Each annex shall start on a new page.

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 clause 5.2.1a). The annex heading shall be followed by the indication "(normative):" or "(informative):", and by the title on the next line.

EXAMPLE 1: Annex A (normative):  
Title of annex A

NOTE: The only exception to this rule is for the deliverable type TR which is entirely informative. Thus the addition of "(normative):" or "(informative):" after the annex identifier is superfluous and shall not be provided.

EXAMPLE 2: Annex A:  
Title of annex A

Numbers given to the clauses, 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 clause 5.2.1a).

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

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



## 16.2 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 ETSI deliverable. Their presence is optional and their status (except for TRs, see note in clause 16.1) shall be indicated in the heading of the annex.

## 16.3 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 ETSI deliverable and shall not contain provisions to which it is necessary to conform in order to be able to claim compliance with the ETSI deliverable. Their presence is optional and their status (except for TRs, see note in clause 16.1) shall be indicated in the heading of the annex.

# 17 Bibliography in an ETSI deliverable

A "Bibliography", if present, shall be an annex entitled "Bibliography".

The "Bibliography" identifies informative references and other reading material. Those publications might or might not be publicly available (no check is made).

- For the "Bibliography" annex use **Heading 8** style (for TR use the **Heading 9** style)
- For the listed material use the **Normal** style or bulleted lists (e.g. **B1+**).

# 18 Index in an ETSI deliverable

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

- Format the index in a section having two columns separated by 0,5 cm using the field `{INDEX |e "→" |c "2"}`.
- Use the **Heading 1** style for the title.

# 19 History in an ETSI deliverable

A history box shall be provided by the ETSI Secretariat as the final unnumbered element in an ETSI deliverable and shows the major milestones in the life of a document.

If it is desired to keep a detailed record of the document history (other than the major milestones) it is recommended that this is done by inserting a separate, informative annex.

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

## 20 Notes and examples

### 20.1 Notes and examples integrated in the text

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

A single note in a 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. clause), they shall be designated "NOTE 1:", "NOTE 2:", "NOTE 3:", etc. (see also clause 5.2.1a).

The word NOTE shall appear in upper case.

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

EXAMPLE 1:

NOTE: 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 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. clause), they shall be designated "EXAMPLE 1:", "EXAMPLE 2:", "EXAMPLE 3:", etc. (see also clause 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

### 20.2 Footnotes to the text

Footnotes shall not be used in ETSI deliverables.

### 20.3 Notes to figures and notes to tables

#### 20.3.1 Notes to figures

Notes to figures shall be treated independently from notes integrated in the text (see clause 20.1). 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 clause 5.2.1a). A separate numbering sequence shall be used for each figure.

- 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.

## 20.3.2 Notes to tables

Notes to tables shall be treated independently from notes integrated in the text (see clause 20.1). 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 clause 5.2.1a). A separate numbering sequence shall be used for each table.

- Use the **TAN** style.
- Separate NOTE: from the text of the note with a "Ctrl" + "→" (tab).
- 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 (see note 2)	Column 3 cell	Column 4 cell (see note 1)
NOTE 1: This cell is a merged cell.			
NOTE 2: This cell is also a merged cell			

---

## 21 Figures

### 21.1 Usage

Figures should be used wherever appropriate to present information in an easily comprehensible form. Each figure shall be referred to explicitly within the text and therefore be numbered.

### 21.2 Format

Figures shall be prepared in accordance to clauses A.5 and/or B.1.

- Use the **TH** style on the paragraph which contains the figure itself.
- Maximum width for figures is 17 cm and maximum height is 22 cm.

### 21.3 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 numbering.

EXAMPLE 1: First figure in clause 5 is figure 5.1, second figure in clause 5.1.1 is figure 5.2, third figure in clause 5.2.3 is figure 5.3.

EXAMPLE 2: First figure in clause 7 is figure 7.1, fifth figure in clause 7 is figure 7.5.

EXAMPLE 3: First figure in clause 7.3.2 is figure 7.3.2.1, fifth figure in clause 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 clause 5.2.1a. For the numbering of figures in annexes, see clause 16.1.

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

## 21.4 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.

## 22 Tables

### 22.1 Usage

Tables should be used wherever appropriate to present information in an easily comprehensible form. Each table shall be referred to explicitly within the text and therefore be numbered.

- Centre tables horizontally.
- The "space between columns" is 0,1 pt or 0,05 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).

### 22.2 Format

The following styles should be used in table cells.

- Table Headings      **TAH**
- Text Left aligned      **TAL**
- Text Centred      **TAC**
- Text Right aligned      **TAR**
- Text justified      **TAJ**

### 22.3 Continuation of tables

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

- Use the table headings tool (**Table, Headings**)

## 22.4 Numbering

Tables may be numbered sequentially throughout the document without regard to the clause numbering, e.g. the 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 numbering.

EXAMPLE 1: First table in clause 5 is table 5.1, second table in clause 5.1.1 is table 5.2, third table in clause 5.2.3 is table 5.3.

EXAMPLE 2: First table in clause 7 is table 7.1, fifth table in clause 7 is table 7.5.

EXAMPLE 3: First table in clause 7.3.2 is table 7.3.2.1, fifth table in clause 7.3.2 is table 7.3.2.5.

One level of subdivision only is permitted (e.g. table 1 may be subdivided as 1 a), 1 b), 1 c), etc.). See also clause 5.2.1a. For the numbering of tables in annexes, see clause 16.

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

## 22.5 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

## 22.6 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 within the column heading.

EXAMPLE:

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

---

## 23 Verbal forms for the expression of provisions

An ETSI deliverable 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 an ETSI deliverable, 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. In the first column of tables 3 to 6 the verbal form that shall be used to express each kind of provision is given. 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.

NOTE: Only singular forms are shown.

The verbal forms shown in table 3 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 3: Requirement**

Verbal form	Equivalent expressions for use in exceptional cases
<b>shall</b>	is to is required to it is required that has to only ... is permitted it is necessary must
<b>shall not</b>	is not allowed [permitted] [acceptable] [permissible] is required to be not is required that ... be not is not to be must not
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 4 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 4: Recommendation**

Verbal form	Equivalent expressions for use in exceptional cases
<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 5 are used to indicate a course of action permissible within the limits of the ETSI deliverable.

**Table 5: Permission**

Verbal form	Equivalent expressions for use in exceptional cases
<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 6 are used for statements of possibility and capability, whether material, physical or causal.

**Table 6: Possibility and capability**

Verbal form	Equivalent expressions for use in exceptional cases
<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.	

NOTE: See expression of Inevitability and Fact at: [http://www.etsi.org/edithelp/verbal\\_forms.htm](http://www.etsi.org/edithelp/verbal_forms.htm)

---

## 24 Use of capital letters

Unnecessary use of capital letters should be avoided.

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

---

### 24a Different items concerning text

Use **bold** to emphasize text (the underline attribute causes confusion when revision marks are used).

Use *italic* for citations, linguistic expressions or when a word/text/expression is extracted from a specific context.

Use non-breaking spaces (°) or non-breaking hyphens (-) in order to avoid unexpected wrap around between two words and/or numbers (e.g. 50°cm, 1°000, clause°6 etc.). These characters appear as normal spaces ( ) or hyphens (-) when printed out.

Use "straight" quotation marks ("...") not "curly" or "smart" (“...”) ones.

Do not put more than one space after a full stop.

Do not precede comma (,), semicolon (;), colon (:), full stop (.), question mark (?) or exclamation mark (!) by spaces.

Do not use spaces in place of tabs when indentation/alignment is required; this can cause text to be misaligned.

---

## 25 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.

## 26 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 1: "... [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 ETSI 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 2: "... [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 ETSI of this (these) product(s)."

## 27 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 × 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°×10<sup>-3</sup> (not 1,8 \* 10<sup>-3</sup> or 1,8 • 10<sup>-3</sup> or 1,8 . 10<sup>-3</sup>).

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: ES°201°150.

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 a 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.

## 28 Quantities, units, symbols and signs

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

## 29 Mathematical formulae

### 29.1 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 clause 14). 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).

### 29.2 Presentation

It is recommended to use Microsoft Equation Editor.

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

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

The equation editor registry file (available from [editHelp!](#)) can be used to apply the following settings when writing equations with the equation editor (download the .reg file once for permanent use).

Styles			
Style	Font	Character Format	
		Bold	Italic
Text . . . . .	Times New Roman	<input type="checkbox"/>	<input type="checkbox"/>
Function . . . . .	Times New Roman	<input type="checkbox"/>	<input type="checkbox"/>
Variable . . . . .	Times New Roman	<input type="checkbox"/>	<input checked="" type="checkbox"/>
L.C. Greek . . . . .	Symbol	<input type="checkbox"/>	<input checked="" type="checkbox"/>
U.C. Greek . . . . .	Symbol	<input type="checkbox"/>	<input type="checkbox"/>
Symbol . . . . .	Symbol	<input type="checkbox"/>	<input type="checkbox"/>
Matrix-Vector . . . . .	Times New Roman	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Number . . . . .	Times New Roman	<input type="checkbox"/>	<input type="checkbox"/>

Sizes	
Full	10pt
Subscript/Superscript	8pt
Sub- Subscript/Superscript	6pt
Symbol	20pt
Sub-symbol	12pt

$$(1+B)^2 \sum_{p=1}^k X n_k^{kp}$$

## 29.3 Numbering

If it is necessary to number some or all of the formulae in an ETSI deliverable in order to facilitate cross-reference, Arabic numbers in parentheses shall be used, beginning with 1:

EXAMPLE 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 numbering.

EXAMPLE 2: First equation in clause 5 is equation 5.1, second equation in clause 5.1.1 is equation 5.2, third equation in clause 5.2.3 is equation 5.3.

EXAMPLE 3: First equation in clause 7 is equation 7.1, fifth equation in clause 7 is equation 7.5.

EXAMPLE 4: First equation in clause 7.3.2 is equation 7.3.2.1, fifth equation in clause 7.3.2 is equation 7.3.2.5.

See also clause 5.2.1a. For the numbering of equations in annexes see clause 16.

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

---

## 30 Indication of dimensions and tolerances

Dimensions and tolerances shall be indicated in an unambiguous manner.

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

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).

EXAMPLE 4a: X = [1..8]

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.

NOTE: For "scientific units" (e.g. "s" for second(s)), please refer to the "Use of English guide" provided in [editHelp!](#)

---

## 31 Presentation of computer language and other code

Computer code (e.g. ASN.1, GDMO, C, C++, etc.) may be included in an ETSI deliverable but should be clearly marked as such.

- Use the **PL** style.

# Annex A (normative): ETSI styles and various information

## A.1 The ETSI styles

Use table A.1 when determining which style to use for various elements of the deliverable. Do not alter existing styles or formats pre-set in the ETSI styles, do not add new styles to the ETSI template and do not delete ETSI styles (see style FP in table A.1).

**Table A.1**

<b>Use this style</b>	<b>For this type of element</b>
<b>Style which can be user-defined</b>	<b>For formatting defined by the user that will not be altered by the ETSI processing macros</b>
FP	Free Paragraph
<b>Heading styles</b>	<b>For different headings</b>
Heading 1	Clause (→ if numbered)
Heading n	Subdivision level n
Heading 8	Annex title
Heading 9	Annex title for TRs only
<b>Example styles</b>	<b>For examples and abbreviations/symbols lists</b>
EX	Reference, Example →
EW	Symbol, Abbreviation, Example continuation in text →
<b>Note styles</b>	<b>For different notes</b>
NO	Note integrated in the text →
NF	Figure note →
<b>Table styles</b>	<b>For formatting tables</b>
TH	Table title, (also Figures)
TAH	Heading within table or column heading
TAC	Centred text within table
TAL	Left aligned text within table
TAN	Note in table →
TAR	Right aligned text within table
TAJ	Justified text within tables
<b>List styles (indents)</b>	
B1 to B5	Indent 1 to 5
B1+	Bulleted indent 1 (round bullets)
B2+	Bulleted indent 2 (dashes)
B3+	Bulleted indent 3 (square bullets)
BN	Bulleted (numbers) indent 1
BL	Bulleted (letters) indent 2
<b>General styles</b>	<b>For different items</b>
Normal	Standard paragraph, Definition
TF	Figure title ( <b>TH</b> for Figure itself)
TT	Contents list title
PL	Programming language
EQ	Equation
Header	Header (portrait and landscape pages)
→ use "tab" between "item/number" and "text".	
EXAMPLE: The "tab" is preceding this example text.	
NOTE: Other styles exist in the template, but are for use by the Secretariat only.	

## A.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 and footers.

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

## A.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.

## A.4 Sequence numbering and bookmarking

Sequence numbering is recommended to automatically number sets of items within a deliverable, especially if the document is long and/or contains numerous references, tables, figures, equations, etc. It avoids renumbering the whole sets when inserting new items.

Sequence numbers may also be bookmarked, in order to facilitate cross-referencing throughout the text: it avoids renumbering cross-references and guarantees their accuracy.

**Do not use Word's cross-referencing tool (Insert, Cross-reference), since it implies the use of automatic heading or caption numbering (see clause 5.2.3).**

Use the following sequence identifiers (**Insert Field Numbering Seq** and type in the relevant sequence identifier):

**Table A.2: Sequence numberings**

Sequence	Bookmark name	Description
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 an ETSI deliverable by using the switch \r1 (e.g. { seq fig \r1 }).		
NOTE 2: "xx" represents the identifier for the particular object concerned, e.g. "fig_ProcessControl" or "ref_en300466". 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**

Bookmark each entry in a sequence (select it and use **Insert 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 } ...

Remember to refresh the fields in order to view the correct numbers by using the "Update fields" command (F9).

---

## A.5 Supported file formats

The following document formats are currently accepted by the ETSI Secretariat:

- Word for Windows<sup>®</sup> 2000
- Word for Windows<sup>®</sup> 97

NOTE: Versions prior to this are strongly discouraged.

The following file formats for embedding into a document are currently accepted by the ETSI Secretariat:

- Microsoft<sup>®</sup> Visio<sup>®</sup> 2000

NOTE 1: Regarding the use of "stencils" or "templates", it is recommended to use those supplied with the standard version.

If additional ones are used, they should be provided to the Secretariat, together with the electronic version of the deliverable.

NOTE 2: Microsoft Visio shall **not** be used for SDL production.

- Micrografx Designer<sup>®</sup> (from 3.1 onwards) and any compatible software that is able to import/export figures made with Designer
- Microsoft<sup>®</sup> Word Picture (embedded application)
- Microsoft<sup>®</sup> Drawing (embedded application)
- Microsoft<sup>®</sup> Office<sup>®</sup> products

The following graphic file formats for linking to a document are currently accepted by the ETSI Secretariat:

- Encapsulated Postscript<sup>™</sup> (preferred for SDL diagrams)

Other graphical formats may be treated but should be avoided as they delay the process.

---

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

### B.1 SDL and MSC diagrams

There are three ways to include SDL diagrams, MSC diagrams (Message Sequence Charts) or HMSC diagrams (High Level MSC) as part of an ETSI deliverable.

- One is to embed SDL diagrams in Word documents by selecting the diagram contents in the SDL tool and copy/pasting into Word.
- A second way is to include embedded postscript files produced by an SDL/MSC tool into the Word document.

In both these cases, provide SDL, MSC or HMSC diagrams in SDT binary files or as CIF files when not using SDT. Do not include SDL headers or footers.

- A third way is to provide the SDL model or MSC and HMSC diagrams as a separate file. This is recommended for large SDL models or large collection of MSC diagrams. In this case, provide CIF files, postscript or PDF files, and also if using SDT include the SDT binary files. If the SDL model uses ASN.1 data, include the ASN.1 data files, to be published with the CIF files.

NOTE: Microsoft Visio shall **not** be used for SDL production.

---

### B.2 Program code

Large volumes of program code, source code or formal description language shall be placed in an electronic attachment accompanying the ETSI deliverable.

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

Use the guidance and the ICS proforma templates contained in EG 201 058 ([editHelp!](#)).

---

### B.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 ATSS 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 [ $\langle x \rangle$ ].*

*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 (<any\_name>.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 (<any\_name>.MP contained in archive <filename>.ZIP) which accompanies the present document.*

*NOTE: Where an ETSI Abstract Test Suite (in TTCN) is published in both .GR and .MP format these two forms shall be considered equivalent. In the event that there appears to be syntactical or semantic differences between the two then the problem shall be resolved and the erroneous format (whichever it is) shall be corrected.*



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

### C.1 General

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

Such an ETSI deliverable, commonly called "endorsement", shall be drafted in accordance with the present document, with the exceptions defined below.

---

### C.2 Title

If the endorsed document is referred to without modifications, the title of the ETSI deliverable should be as close as possible to the title of the endorsed document, but comply with the provisions of clause 6.

EXAMPLE 1:

Endorsement of ITU-T Recommendation Q.1215 (1993): "Physical plane for intelligent network CS1", gives the ETSI deliverable 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 ETSI deliverable 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 ETSI deliverable 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]

---

### C.3 Requirements

This element is normative 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.

---

## C.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.

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## Annex D (normative): Safety statements

### D.1 Introduction

ETSI TC Safety shall be consulted concerning statements to be included in deliverables regarding the protection of the health and the safety of the user and any other person.

There are several product safety standards already available from CENELEC that have been published in the Official Journal of the European Commission in connection with the Low Voltage Directive (LVD) 73/23/EC. Such Harmonized Standards can be used to demonstrate compliance with some or all of the essential requirements of article 3.1(a) of the Radio equipment & Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC (see article 18).

The essential requirements for the protection of the health and the safety of the user and any other person under the R&TTE Directive include but are not necessarily limited to the safety objectives published in the LVD.

If it is desired to give the user of the deliverable some guidance on safety matters, the following text shall be used in all ETSI deliverables (either as a separate clause or as the final element of the Scope):

*Requirements for safety are outside the scope of the present document. Safety standards are published by CENELEC.*

*NOTE 1: An example of such a CENELEC product safety standard is EN 60950.*

*NOTE 2: For safety categories of interfaces, see EG 201 212.*

If this is done then the following shall be added to the Bibliography of the ETSI deliverable:

- *CENELEC EN 60950: "Safety of information technology equipment".*
- *ETSI EG 201 212: "Electrical safety; Classification of interfaces for equipment to be connected to telecommunication networks". This document is also available from CENELEC as ROBT-002.*

---

## Annex E (normative): Candidate Harmonized Standards

### E.1 General directions

The elements necessary for the drafting of a candidate Harmonized Standard are briefly summarized below:

- a) The candidate Harmonized Standard shall be an EN produced in accordance with the present document.
- b) The EN shall be identified as a candidate Harmonized Standard, the reference of which is intended to be published in the Official Journal of the European Communities referencing the relevant Directive. This identification shall be made in the "Foreword" at "Public Enquiry" and "Vote" stage and when the standard is published by ETSI (see clause E.2).
- c) The candidate Harmonized Standard shall have appropriate transposition periods specified. A candidate Harmonized Standard confers presumption of conformity when it has been published in the Official Journal of the European Communities and transposed by a member state. The Official Journal citation gives the date of cessation of presumption of conformity of a previous standard. This is usually taken to be the date of withdrawal (dow) supplied by the standardization body.
- d) The candidate Harmonized Standard shall include all technical specifications necessary for demonstrating presumption of conformity of the products and phenomena within its scope. Products may have more than one attribute. Candidate Harmonized Standards under all attributes may be applicable.
- e) Methods of measurement may be included in the candidate Harmonized Standard, or may be normatively referenced in the text.
- f) The candidate Harmonized Standard shall contain a normative annex identifying the technical specifications with the essential requirements of the relevant Directive (see clause E.3).

NOTE: A Special Report (SR 001 470) containing a pro-forma for the production of candidate Harmonized Standards for all radio equipment and telecommunication terminal equipment under Directive 1999/5/EC (the R&TTE Directive) exists in [editHelp!](#).

---

### E.2 Foreword of a candidate Harmonized Standard

The Foreword of a candidate Harmonized Standard under the R&TTE Directive shall contain the following text:

*The present document has been produced by ETSI in response to a mandate from the European Commission issued under Council Directive 98/34/EC (as amended) laying down a procedure for the provision of information in the field of technical standards and regulations.*

*The present document is intended to become a Harmonized Standard, the reference of which will be published in the Official Journal of the European Communities referencing the Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity ("the R&TTE Directive").*

*Technical specifications relevant to Directive 1999/5/EC are given in annex <X>.*

NOTE: This is one example of such text. Text for other Directives will be adapted by the ETSI Secretariat.

---

## E.3 Annex of a candidate Harmonized Standard

The candidate Harmonized Standard shall also contain a normative annex which presents a requirements table. The annex shall conform to the following format:

**Annex <X> (normative):**

***Clauses of the present document relevant for compliance with the essential requirements of the R&TTE Directive***

***Table <X>.1: Clauses of the present document relevant for compliance with the essential requirements of the R&TTE Directive***

<i>Clause number and title</i>	<i>Corresponding article of the R&amp;TTE Directive</i>	<i>Qualifying remarks</i>

---

## E.4 References in a Candidate Harmonized Standard

References in a Candidate Harmonized Standard shall always be published and specific.

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## History

<b>Document history</b>		
V1.1.1	April 1998	Publication as TR 101 262 (withdrawn)
V1.2.1	September 2000	Publication as SR 001 262
V1.3.1	April 2001	Publication