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| --- | --- |
| 3GPP TS|TR ab.cde Vx.y.z (yyyy-mm) | |
| Technical Specification|Report  In the document, delete either "TS" and "Specification" or "TR" and "Report" as applicable. Below, replace <TSG name> by Technical Specification Group Radio Access Network Technical Specification Group Services and System Aspects Technical Specification Group Core Network and Terminals | |
| 3rd Generation Partnership Project;  Technical Specification Group <TSG name>;  <Title 1;  Title 2;  Title 3;  Title 4;  Title 5;  Title 6>  (Release | 17 | 16 | 15) | |
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| **Logos:** Use exactly one of the left hand logo cells above. Delete all the other left-hand cells. Delete each of the whole cells, not just the contents of each cell. Retain just one of the left hand logo cells as follows:   1. Use the top line for documents which relate to 5G technology (regardless of their applicability to GERAN, UTRAN or LTE technologies) in Release 15 onwards. From Release 15, use this line for **all** specs **except** those explicitly restricted to GERAN or UTRAN. 2. Use the second line for documents which relate to LTE technology (regardless of their applicability to GERAN or to UTRAN technologies) in Release 13 and 14. 3. Use the third line for documents which relate to LTE technology (regardless of their applicability to GERAN or to UTRAN technologies) in Releases 10, 11 and 12. 4. Use the fourth line for documents which relate to LTE technology (regardless of their applicability to GERAN or to UTRAN technologies) in Releases **prior to** Release 10. 5. Use the fifth line for documents which are specific to UTRAN technology only or to GERAN and UNTRAN technologies only (no specific logo). 6. Use the bottom line for documents which are specific to GERAN technology only. | |
| The present document has been developed within the 3rd Generation Partnership Project (3GPP TM) and may be further elaborated for the purposes of 3GPP. The present document has not been subject to any approval process by the 3GPPOrganizational Partners and shall not be implemented. This Specification is provided for future development work within 3GPPonly. The Organizational Partners accept no liability for any use of this Specification. Specifications and Reports for implementation of the 3GPP TM system should be obtained via the 3GPP Organizational Partners' Publications Offices. | |

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For definitive guidance on drafting 3GPP TSs and TRs, see [3GPP TS 21.801](http://www.3gpp.org/DynaReport/21801.htm) supplemented by the 3GPP web page <http://www.3gpp.org/specifications-groups/delegates-corner/writing-a-new-spec>.

Ensure all blue guidance text is removed before submitting the TS/TR to the TSG for approval.

# Foreword

This clause is mandatory; do not alter the text in any way.

In drafting the TS/TR pay particular attention to the use of modal auxiliary verbs!

This Technical Specification|Report has been produced by the 3rd Generation Partnership Project (3GPP).

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.

In the present document, certain modal verbs have the following meanings:

**shall** indicates a mandatory requirement to do something

**shall not** indicates an interdiction (prohibition) to do something

NOTE 1: The constructions "shall" and "shall not" are confined to the context of normative provisions, and do not appear in Technical Reports.

NOTE 2: The constructions "must" and "must not" are not used as substitutes for "shall" and "shall not". Their use is avoided insofar as possible, and they are not used in a normative context except in a direct citation from an external, referenced, non-3GPP document, or so as to maintain continuity of style when extending or modifying the provisions of such a referenced document.

**should** indicates a recommendation to do something

**should not** indicates a recommendation not to do something

**may** indicates permission to do something

**need not** indicates permission not to do something

NOTE 3: The construction "may not" is ambiguous and is not used in normative elements. The unambiguous constructions "might not" or "shall not" are used instead, depending upon the meaning intended.

**can** indicates that something is possible

**cannot** indicates that something is impossible

NOTE 4: The constructions "can" and "cannot" shall not to be used as substitutes for "may" and "need not".

**will** indicates that something is certain or expected to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**will not** indicates that something is certain or expected not to happen as a result of action taken by an agency the behaviour of which is outside the scope of the present document

**might** indicates a likelihood that something will happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

**might not** indicates a likelihood that something will not happen as a result of action taken by some agency the behaviour of which is outside the scope of the present document

In addition:

**is** (or any other verb in the indicative mood) indicates a statement of fact

**is not** (or any other negative verb in the indicative mood) indicates a statement of fact

NOTE 5: The constructions "is" and "is not" do not indicate requirements.

# Introduction

This clause is optional. If it exists, it is always the second unnumbered clause.

# 1 Scope

This clause shall start on a new page.

The present document …

# 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, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

…

[x] <doctype> <#>[ ([up to and including]{yyyy[-mm]|V<a[.b[.c]]>}[onwards])]: "<Title>".

It is preferred that the reference to 21.905 be the first in the list.

# 3 Definitions of terms, symbols and abbreviations

This clause and its three subclauses are mandatory. The contents shall be shown as "void" if the TS/TR does not define any terms, symbols, or abbreviations.

## 3.1 Terms

For the purposes of the present document, the terms given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

Definition format (Normal)

**<defined term>:** <definition>.

**example:** text used to clarify abstract rules by applying them literally.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

Symbol format (EW)

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 3GPP TR 21.905 [1] and the following apply. An abbreviation defined in the present document takes precedence over the definition of the same abbreviation, if any, in 3GPP TR 21.905 [1].

Abbreviation format (EW)

<ACRONYM> <Explanation>

# 4 Examples for Styles

The main text of the document should start here, after the above clauses have been added.

The following styles and editing techniques are aimed to help in the formatting of the document using the 3GPP Template: 3GPP\_70.dot, available from the 3GPP FTP site (<ftp://ftp.3gpp.org/Information>).

## 4.1 Heading Styles

Heading styles are included in the 3GPP TS Template and are used as follows:

**Do not use any built-in automatic numbering** for 3GPP documents. Although this is sometimes useful in the early drafting stages of a document, once the document has been placed under change control, the clause numbering needs to be fixed in order to keep cross-reference consistency as the 3GPP specification set develops.

Heading 1: Used for Main clauses (1, 2, 3, etc.). Also used for Annex clauses (A.1, A.2, etc.).

Heading 2: Used for Main clauses (4.1, 4.2, 5.1, 5.2, etc.). Also used for Annex clauses (A.1.1, A.1.2, etc.).

Heading 3: Used for 2nd level clauses (4.1.1, 4.1.2, 5.1.1, 5.1.2, etc.). Also used for Annex clauses (A.2.1.1, A.2.1.2, etc.).

Heading 4 & 5: Used for 3rd and 4th level clauses and Annex clauses.

Heading 6 & 7: Not used, instead use style "H6" so that the title appears in the document, but does not appear in the Table of Contents.

Heading 8: Used for Main Annex titles in Specifications (3GPP TS) (e.g. Annex A (normative): ).

Heading 9: Used for Main Annex titles in Reports (3GPP TR) (e.g. Annex A: ).

## 4.2 Other common styles

Normal: Used for main document text.

NO: Used for Notes in the text (Allows Tab and Indent). See example below.

NW: Same as NO, but Without line space after. Used when there are many notes in sequence.

NOTE 1: This is an example of a note formatted in style NW. The style is designed to allow space for note numbering and line wrap with a hanging indent. There is no line space after.

NOTE 2: This is an example of a note formatted in style NO. The style is designed to allow space for note numbering and line wrap with a hanging indent. There is a line space after.

Bullet styles: The following bullet styles are provided.

B1: Bullet level 1 for main bullet points.

B2: Bullet level 2 for sub bullets.

B3-B5: for further sub bullets.

NOTE: Bullets are usually formatted manually, using a hyphen ( - ) or alphanumeric identifiers: a), b), or 1), 2) etc. followed by a tab character. **Automatic bullet features should not be used** as they may be lost if template styles are re-applied later.

Table styles: **TAH**, **TAL**, **TAC**, **TAR**, **TAN**, for **TA**ble **H**eaders, **L**eft justified, **C**entred, **R**ight justified and **N**otes in tables: Style **TH** is used for the **T**able **H**eading (title or caption). See example below.

Table 1: Example of table styles

|  |  |  |
| --- | --- | --- |
| Col 1 Header (TAH) | Col 2 Header (TAH) | Col 3 Header (TAH) |
| Left Justified (TAL) | Centred (TAC) | Right Justified (TAR) |
| NOTE: A special style is provided for notes within a table (TAN). | | |

Warning: The default setting for table cells is to disallow rows to break at a page boundary. If you include tables with very long cells, likely to extend beyond the bottom of the page (bearing in mind the table header and the page header and footers, and the margin settings), then you must enable that row's "Allow row to break across pages" setting.

Figure styles: Figures and graphics are formatted with style "**TH**" which keeps the figure with the following paragraph, usually the figure title. **F**igure **T**itles (captions) are formatted with style "**TF**". See example below.



Figure 1: Example figure layout. To remove "float over text" select the graphic and "Format Object ..." - De‑select "float over text" in the Position Tab

# "TSG <Name>" on the front page

The following text are used for the Technical Specification Group "**<Name>**" on the front Page:

|  |  |
| --- | --- |
| TSG | Full Name |
| TSG CT | Core Network and Terminals |
| TSG RAN | Radio Access Network |
| TSG SA | Services and System Aspects |

# Page setup parameters

This clause defines the margin parameters and the header to be used (implemented in the macros).

Title page (= title section)

A4 portrait, Top: 4 cm, Bottom: 19 cm, Left: 1,5 cm, Right: 1,5 cm, Gutter: 0 cm, Header: 0 cm, Footer: 0 cm.

Portrait sections

A4 portrait, Top: 2.5 cm, Bottom: 2 cm, Left: 2 cm, Right: 2 cm, Gutter: 0 cm, Header: 1,5 cm, Footer: 0,6 cm.

Landscape sections

A4 landscape, Top: 2 cm, Bottom: 2 cm, Left: 2 cm, Right: 2,5 cm, Gutter: 0 cm, Header: 1,5 cm, Footer: 0,6 cm.

Headers and footers

Header

The following contains the master location for all headers (except for the title section). These paragraphs contain framed fields which will result in one header line and are bookmarked "header".

The left entry contains a possible additional document reference, e.g. " Release 1999", identified on the title page by the use of the ZGSM character style.

Release | 17 | 16 | 15

The centre entry is the page number.

11

The right entry repeats the title page information, identified by the use of the ZA paragraph style.

3GPP TS ab.cde Vx.y.z (yyyy-mm)

NOTE: For documents which are split into more than one file, the possible additional document reference and the title page information need to be hardcoded in all files except the one containing the title section.

NOTE: It has been found that opening very long documents with MS Word 2016 onwards (including versions of Word packaged in MS Office 365) can take a very long time, as can navigating around the document. This applies both in draft view and in print layout view. To solve this problem, the page header **for each section** of the document may be hard-coded, replicating the text which would otherwise have been automated via the use of ZGSM and ZA styles.

Footer

The footer contains always "3GPP" (except for the title page).

3GPP

# Proforma copyright release text block

(e.g. for PICS and PIXIT Proformas)

This text block shall immediately follow the heading of an element (i.e. clause or annex) containing a proforma or template which is intended to be copied by the user. Such an element shall always start on a new page.

## X.1 The right to copy

Notwithstanding the provisions of the copyright clause related to the text of the present document, the 3GPP Organizational Partners grant that users of the present document may freely reproduce the <proformatype> proforma in this clause|annex so that it can be used for its intended purposes and may further publish the completed <proformatype>.

# Abstract Test Suite (ATS) text block

This text should be used for ATS using TTCN. The subdivision is recommended.

# Y Abstract Test Suite (ATS)

## Y.1 Introduction

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.

# Y.2 The TTCN Graphical form (TTCN.GR)

The TTCN.GR representation of this ATS is contained in an Adobe Portable Document Format™ file (<pdf\_file\_name>.PDF contained in archive <zip\_file\_name>.ZIP) which accompanies the present document.

# Y.3 The TTCN Machine Processable form (TTCN.MP)

The TTCN.MP representation corresponding to this ATS is contained in an ASCII file (<mp\_file\_name>.MP contained in archive <zip\_file\_name>.ZIP) which accompanies the present document.

Annex <A> (normative):  
<Normative annex for a Technical Specification>

Start each annex on a new page.

Annexes are labelled A, B, C, etc. and designated either "normative" or "informative" depending on their content.

Normative annexes only to appear in Technical Specifications. Use style "Heading 8".

Annex <B> (informative):  
<Informative annex for a Technical Specification>

Informative annexes may appear in both Technical Specifications and Technical Reports. Use style "Heading 8" for use in TSs.

Informative annexes shall not contain requirements for the implementation of the Technical Specification.

# B.1 Heading levels in an annex

Heading levels within an annex are used as in the main document, but for Heading level selection, the "A.", "B.", etc. are ignored. e.g. **B.1.2** is formatted using ***Heading 2*** style.

Annex <B>:  
<Informative annex title for a Technical Report>

Informative annexes in Technical Reports do not use "(informative") in the title, since all annexes in TRs are informative. Use style "Heading 9" in TRs.

Annex <C> (informative):  
Bibliography

The Bibliography is optional. If it exists, it shall follow the last technical annex in the document.

The following material, though not specifically referenced in the body of the present document (or not publicly available), gives supporting information.

Bibliography format

<Publication>: "<Title>".

Annex <D> (informative):  
Index

The Index is optional. If it exists, it shall immediately precede the Changes history annex.

Generate the index using MS Word's index field feature.

Annex <X> (informative):  
Change history

This is the last annex for TS/TSs which details the change history using the following table.  
This table is to be used for recording progress during the WG drafting process till TSG approval of this TS/TR.  
For TRs under change control, use one line per approved Change Request  
Date: use format YYYY-MM  
CR: four digits, leading zeros as necessary  
Rev: blank, or number (max two digits)  
Cat: use one of the letters A, B, C, D, F  
Subject/Comment: for TSs under change control, include full text of the subject field of the Change Request cover  
New vers: use format [n]n.[n]n.[n]n

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Change history** | | | | | | | |
| **Date** | **Meeting** | **TDoc** | **CR** | **Rev** | **Cat** | **Subject/Comment** | **New version** |
|  |  |  |  |  |  |  |  |

Change history of this template:

|  |  |  |
| --- | --- | --- |
| 2001-07 | Copyright date changed to 2001; space character added before TTC in copyright notification; space character before first reference deleted. | 1.3.3 |
| 2002-01 | Copyright date changed to 2002. | 1.3.4 |
| 2002-07 | Extra Releases added to title area. | 1.3.5 |
| *2002-12* | *"TM" added to 3GPP logo.* | *1.3.6* |
| *2003-02* | *Copyright date changed to 2003.* | *1.3.7* |
| *2003-12* | *Copyright date changed to 2004. Chinese OP changed from CWTS to CCSA* | *14.0* |
| *2004-04* | *North American OP changed from T1 to ATIS* | *1.5.0* |
| *2005-11* | *Stock text of clause 3 includes reference to 21.905.* | *1.6.0* |
| *2005-11* | *Caters for new TSG structure. Minor corrections.* | *1.6.1* |
| *2006-01* | *Revision marks removed.* | *1.6.2* |
| *2008-11* | *LTE logo line added, © date changed to 2008, guidance on keywords modified; acknowledgement of trade marks; sundry editorial corrections and cosmetic improvements* | *1.7.0* |
| *2010-02* | *3GPP logo changed for cleaner version, with tag line; LTE-Advanced logo line added;  © date changed to 2010; editorial change to cover page footnote text; trade marks acknowledgement text modified; additional Releases added on cover page; proforma copyright release text block modified* | *1.8.0* |
| *2010-02* | *Smaller 3GPP logo file used.* | *1.8.1* |
| *2010-07* | *Guidance note concerning use of LTE-Advanced logo added.* | *1.8.2* |
| *2011-04-01* | *Guidance of use of logos on cover page modified; copyright year modified.* | *1.8.3* |
| *2013-05-15* | *Changed File Properties to MCC macro default.*  *Removed R99, added Rel-12/13.*  *Modified Copyright year.*  *Guidance on annex X Change history.* | *1.8.4* |
| *2014-10-27* | *Updated Release selection on cover. In clause 3, added "3GPP" to TR 21.905.* | *1.8.5* |
| *2015-01-06* | *New Organizational Partner TSDSI added to copyright block. Old Releases removed.* | *1.9.0* |
| *2015-12-03* | *Provision for LTE Advanced Pro logo  Update copyright year to 2016* | *1.10.0* |
| *2016-03-08* | *Standarization of the layout of the Change History table in the last annex.(Unreleased)* | *1.11.0* |
| *2016-06-15* | *Minor adjustment to Change History table heading* | *1.11.1* |
| *2017-03-13* | *Adds option for 5G logo on cover* | *1.12.0* |
| *2017-05-03* | *Smaller 5G logo to reduce file size* | *1.12.1* |
| *2019-02-25* | *Replacement of frames on cover pages by in-line text.*  *Clarification of help text on when to use 5G logo. Removal of defunct keywords frame on page 2. Add Rel-16, Rel-17 options, eliminated earlier, frozen, Releases (cover page, below title) Corrections to some guidance text, addition of guidance text concerning automatic page headers under Word 2016 ff. Use of modal auxiliary verbs added to Foreword. More explicit guidance on Bibliography and Index annexes. Converted to .docx format.* | *1.13.0* |