**3GPP Conference Call on 3GPP Spec Modernization #1 6GSM-2500ZZ**

**Electronic, 8 August 2025, 13:00-15:00 UTC**

**Source: Samsung**

**Title:** **pCR 21.802 – 4.3.1 – General Requirements**

**Document for: Discussion, Approval**

**Agenda Item: TBD**

**Work Item / Release: Study on Modernization of Specification Format and Procedures for 6G (FS\_6Gspecs) / Release 20**

***Abstract of the contribution:***

*This pCR* *lists requirements for a solution. There is extensive reference to the new Annex proposed in 6GSM-2500ZZ summarizing the result of the 3GPP stakeholder survey on CR Tools in 2022.*

**Discussion**

To address CR quality improvement and CR implementation automation, a number of requirements have been identified. Also, requirements that ***any tool used for CR development*** needs to support.

**Proposal**

It is proposed to make the changes proposed to TR 21.802, v0.1.0.

BEGIN CHANGES

## 3.1 Terms

For the purposes of the present document, the terms given in 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 TR 21.905 [1].

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

**delegate:** The delegate creates or modifies a CR. Each CR can have multiple authors, in the sense that a CR can have a very complex set of changes. The delegate may or may not be a 'source' as listed on the header page, as a CR can get further revised by anyone off-line who wishes their views to be taken into account.

**consumer:** The consumer views the CR as a complete document, where the changes to the specification text are quite clear, as well as the context (surrounding clause for each change.) A consumer will not modify a CR's content (this is the difference between a consumer and delegate.)

**MCC/rapporteur:** If sufficiently correct, a MCC/rapporteur produces a target specification from a source specifiation that incorporates the changes included in the CR. The MCC/rapporteur evaluates CRs for correctness (according to TR 21.801 criteria as well as procedural requirements, such as:

- the CR number on the CR is correct;

- that there is no clashing change (when considered in the context of other CRs that are approved in the CR database);

- and the CR is 'approved' in the CR database, etc.)

NOTE: The above list is not intended to be complete. It is included in this clause to provide examples.

## 3.2 Symbols

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

<symbol> <Explanation>

## 3.3 Abbreviations

For the purposes of the present document, the abbreviations given in 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 TR 21.905 [1].

<ABBREVIATION> <Expansion>

SECOND CHANGE

## 4.3 Requirements Identification

Editor's note: corresponds to Objective 1c

### 4.3.1 General requirements

The survey results in Annex A (must have and high priority) are used as a basis for the requirements shown in Table 4.3.1-1 below. Wherever a requirement is based on 'practice' or 'aspiration' instead of TR 21.801, this is explained in a NOTE.

Editor's Note: Where it is not clear whether a requirement is mandatory or not, the modality is "SHOULD" not "SHALL".

The requirements as much as possible are placed on the tools, to enable a specific function or way of working. Explicit in the requirement are those who the requirement serves, the actors who need the specific function. There are three users included in Table 4.3.1-1: delegate, consumer, MCC/rapporteur.

Table 4.3.1-1: General Requirements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| # | Requirement | Description | Applicable to objective 2 | Applicable to objective 3 |
|  |  |  |  |  |
| a | Support all types of content in 21.801 (not necessarily the same formats) | 3GPP standards specifications shall support types of content in TR 21.801, including: *text, list, table, figure (in the form of a procedure, a simple block diagram or a free sketch diagram of comparable flexibility to MS Word drawing tools or MS Visio), equation, code, equations, SDL, MSC, UML.* In text, some specific content includes *symbols*, *non-breaking spaces and hyphens.*  | yes | yes |
| b | Support consistent output production | 3GPP standards publications shall have consist appearance. From the scope of TR 21.801 [x] " These rules are intended to ensure that such documents are drafted in as uniform a manner as is practicable, irrespective of the technical content." New specifications (for 6G) need to have a consistent appearance and quality indistinguishable from previous generations. | yes | yes |
| c | Support equivalent format control to 21.801 styles (with possible exceptions) | For each style, there shall be a means to produce the same effect. NOTE 1: An analysis of support of Markdown conventions to address style requirements is provided in Annex B of the present document. | yes | yes |
| d | Support text content functions | 1. A delegate shall be able to highlight text, to draw attention to it, even though highlighting is not allowed in the drafting rules and cannot be in an approved CR.2. A delegate shall be able to enter or modify subscripts and superscripts.3. A delegate shall be able to insert or modify symbols (non-alpha-numeric characters).4. A delegate shall be able to create and modify multi-level bulleted or numbered lists of text.5. A delegate shall be able to create and modify special characters (non-breaking space, non-breaking hyphen).6. A delegate shall be able to remove all formatting from text. NOTE 2: This is not a requirement of the drafting rules, but in practice without this capability it is impossible to comply with the drafting rules.7. A delegate shall be able to view non-printing characters (non-breaking spaces, tabs, new lines, page breaks, etc.) if these are added to the content of the CR.NOTE 3: Except for non-breaking spaces, other non-printing characters are generally not part of the content of the CR. Where these are mentioned at all in TR 21.801, this is to support Microsoft Word use of styles (as in 5.2.6 guidance to separae a term ID from the term definition by a tab. In Markdown this could use another approach, e.g. the term<newline>: <definition> convention. | yes | yes |
| e | Support table content functions | 1. A delegate shall be able to create tables, including rows and columns whose widths acceptably capture all cell content. 2. In cases where automatic width and height are insufficient, a delegate should be able to adjust the table.3. A delegate shall be able to merge cells.4. A delegate shall be able to split cells.NOTE 4: For requirement e.3 and e.4 the effect is to allow any given set of cells to span more than one row or column.5. A delegate shall be able to set cell horizontal alignment (left, center, right) as well as vertical alignment (top, center, bottom).6. A delegate should be able to set text direction (e.g. to vertical instead of horizontal.)NOTE 5: This is not included in TR 21.801. Some specifications use this format to reduce horizontal space used by row names in very crowded tables.7. A delegate should be able to change the background of a cell in a table (e.g. to gray).NOTE 6: TR 21.801 does not allow the use of colors, however gray backgrounds are permitted. There is no drafting rule that permits graying cells, but it is done to improve readability of some tables in 3GPP specifications.8. A delegate should be able to add figures (including graphic images) to cells in tables.NOTE 7: TR 21.801 does not forbid the inclusion of images and figures in tables and this is done in some 3GPP specifications.9. Any change to a table's content shall be able to be presented in 'change marked' fashion, so that it is clear what the change was, and this should include who made the change and at what time.NOTE 8: In TR 21.801 the guidance is general, only a recommendation, and not specific to Word change marks: "The use of manual revision marks for the presentation of the modifications is recommended. Deleted text should be struckout; inserted text should be underlined. Neither deleted nor inserted text should be coloured." There is no mention of metadata (who, when, etc.) However, in other places automatic (Word) 'revision marks' are assumed, e.g. H.7.1 which forbids underlining as it could be confused with revision marks... | yes | yes |
| f | Support figure content functions | 1. A delegate shall be able to create and import non-editable figures.NOTE 9: TR 21.801 does not specify whether figures are required to be editable. As a matter of practice, whenver a figure contains normative information, a delegate provides the possibility to edit it (i.e. by using content that is modifiable.)2. A delegate shall be able create and modify editable figures.3. A delegate and MCC/rapporteur should be able to format figures in CRs (e.g. PNGs, JPG, etc.) in terms of centering and size.NOTE 10: Formatting of figures is not mentioned in TR 21.801. | yes | yes |
| g | Support code content functions | 1. A delegate shall be able to create and modify code in the specification in which the code is associated.NOTE 11: The question of whether code text will be specified in CR text or in separate files, etc. is determined by TSG not by the present study. | yes | yes |
| h | Support equation content functions | 1. A delegate shall be able to create and modify equations. 2. A delegate, consumer and MCC/rapporteur of a CR shall be able to view equations rendered as graphic representations.NOTE 12: It is not in scope of the requirements how equations are rendered as graphics. | yes | yes |
| i | Support equation delegate funcations | 1. A delegate shall be able to create and modify message sequences using MSC (Message Sequence Chart) definition language. 2. A delegate, consumer and MCC/rapporteur of a CR shall be able to view specifications including message sequence charts rendered as graphic representations.NOTE 13: It is not in scope of the requirements how MSC code is rendered as graphics. | yes | yes |
| j | Support WYSIWYG interaction | A delegate and MCC/rapporteur shall be able to view the content of (part of a specification) in the form in which it will be published (as a specification) while making changes to the content of the CR.NOTE 14: Changes will be reflected in the presented 'view' CR as a result of the change, ideally instantly. This capability allows groups of delegates to 'wordsmith' on-line at meetings, on conference calls, etc. It also is an important (even essential) aspect of tool usability for many delegates. NOTE 15: This requirement does not imply that all content must be editable 'live'. This is already impossible for, e.g. PNG and JPG figures in CRs, external files included in CRs, output of the MSC\_GEN application and more. | yes | yes |
| k | Support change marking | 1. Every change to content in a CR shall result in a 'change marking' visible, indicating what changed and who made the change.NOTE 16: There requirements in this table that provide more detailed information regarding expectations for change marking. See NOTE 8 above. | yes | yes |
| l | Support adding and controlling comments | 1. Every consumer and delegate shall have the ability to associate a comment with specific provisions (e.g. a paragraph, single word, figure, etc.) of any CR. This comment includes comment text, the identity of the commenter and the time in which the comment was provided.2. A delegate shall have the means to remove or 'disassociate' comments with text in a CR, so as to 'clean up' a CR before final agreement, since CRs do not include comments in their approved form.NOTE 17: It is not assumed in requirements n.1 and n.2 how comments are implemented, e.g. whether they are intrinsic to a CR document / source data or whether these comments are stored extrinsic to the CR. | yes | yes |
| m | Support for viewing CRs in context | A delegate, consumer and MCC/rapporteur of a CR shall be able to view the proposed changed text in the context of the clause affected. | yes | yes |
| n | Tool use according to 'reasonable terms' | The tools used by a delegate, reader and MCC/rapporteur to create, edit, read and otherwise work with CRs shall be available under reasonable licensing terms: the tools shall be available in all geographies and not be unacceptably expensive for 3GPP participants to license. | yes | yes |

END OF CHANGES