CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

21.900	CR	**005**	Current Version:	**3.2.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑   *↑ CR number as allocated by MCC support team*

For submission to:	**SA#8**	for approval	**X**	strategic		*(for SMG*
list expected approval meeting # here ↑		for information		non-strategic		*use only)*

Form: CR cover sheet, version 2 for 3GPP and SMG   The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc

Proposed change affects: (U)SIM [ ]   ME [ ]   UTRAN / Radio [ ]   Core Network [ ]
(at least one should be marked with an X)

Source:	MCC		**Date:**	2000-06-21

Subject:	Clarification and editorial corrections to provisions covering the management of specifications and work items.

Work item:	

Category:
(only one category shall be marked with an X)

				Release:		
F	Correction		[ ]		Phase 2	[ ]
A	Corresponds to a correction in an earlier release		[ ]		Release 96	[ ]
B	Addition of feature		[ ]		Release 97	[ ]
C	Functional modification of feature		**X**		Release 98	[ ]
D	Editorial modification		[ ]		Release 99	**X**
					Release 00	[ ]

Reason for change:	Specific elements on handling specifications eliminated to avoid duplication with 21.100; and on software tools to avoid duplication with 21.801.

Clauses affected:	Most

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:	
Other GSM core specifications	[ ]	→ List of CRs:	
MS test specifications	[ ]	→ List of CRs:	
BSS test specifications	[ ]	→ List of CRs:	
O&M specifications	[ ]	→ List of CRs:	

Other comments:	

help.doc

<--------- double-click here for help and instructions on how to create a CR.

1 Scope

This document outlines the working methods [to be] used by the 3GPP Technical Specification Groups and their Working Groups and their Ssub-Ggroups, and by the 3GPP Support Team in relation to document management, i.e. handling of specifications, updating procedures, change request procedures, version control mechanisms, specifications status information etc. It complements the rules and procedures defined for 3GPP. This document does not stipulate the details of the internal working of the TSG Ssub-Ggroups. From the Technical Specification Group point of view, a task and responsibility is given to a Working Group (WG) directly answering to the Technical Specification Group. In practice, the work/task may be carried out in a subgroup of that WGWorking Group.

1A 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.

- Non-specific references to 3GPP documents should be interpreted as referring to the same Release as the present document, as indicated on the title page.

3G TR 21.801: "3GPP drafting rules".

3G TR 21.905: "3G vocabulary"

2 Definitions and abbreviations

For the purposes of the present document, the following terms and those in 3G TR 21.905 apply.

building block: sub-division of a feature, representing a coherent set of technical functionality which would generally be expected to reside in a single system element

change control: When a specification has been put under change control, changes to the specification require an approval of formal change requests. Rules for change control are defined in section 4.procedure whereby proposed modifications to a specification are presented for approval to the TSG as formal Change Requests

closed: A closed major version of a specification is still published; however no changes to the major version of the specification are possible anymore (not even essential corrections).specification status in which no changes of any kind to the specification are permitted

Change Request (CR): Change Requestformal proposal presented on a standard form to modify a specification which is under change control.

draft: A specification is draft before getting under change control.specification status prior to change control, in which changes may be made without formal Change Requests

feature: new or substantially enhanced functionality which represents added value to the existing system

frozen: For a frozen major version of a specification, the only allowed change requests are essential corrections.specification status in which only essential corrections are permitted

Group: TSG or TSG Sub-Group

major version: For version ~~w.x.y~~x.y.z of a specification, ~~w~~x is called the major version~~.~~

  Example: ~~~~ ~~-~~For version 3.2.0 of a specification, the major version is 3~~.~~

specification: ~~In this document, the generic term Specification is used for both~~ generic term standing for Technical ~~Specifications~~ and Technical Reports~~. A distinction between the two is done only where relevant.~~

TSG: Technical Specification Group

TSG change control: ~~Technical Specification Group Change Control: The~~ specification status in which the Technical Specification Group is responsible for approval of Change Requests~~.~~

TSG Sub-Group: ~~A TSG~~ Working Group or ~~a~~ subgroup ~~installed by a TSG Sub-Group (recursive definition)~~of a Working Group or of a Sub-Group

~~TSG~~ Working Group (WG): ~~Technical Specification Group Working Group. A~~ official subgroup of a TSG ~~working group installed by the TSG and~~ reporting to ~~the~~ that TSG~~.~~

~~TSG~~ WG Change Control: ~~Technical Specification Group Working Group Change Control: The TSG Working Group is responsible for approval of Change Requests.~~specification status in which the Working Group is responsible for agreeing Change Requests for submission to the TSG for approval

version: ~~A specification has versions which are identified by three numbers w.x.y.~~unique identifier in the form x.y.z for a specification at a given point in time

  Example: ~~~~ ~~-~~version 3.12.3.

~~WI:~~   ~~Work Item.~~

~~WID:~~ ~~Work Item Description.~~

withdrawn: ~~A withdrawn specification does not belong to the set of valid specifications.~~specification status in which the given version of the specification no longer belongs to the appropriate set of valid specifications

Work Item (WI):   ~~A work item aims at introduction of a new feature or at enhancement of existing features. It may entail new specifications and/or changes to existing specifications.~~ description of an enhancement to a technical area, which may be categorized as feature, building block or work task

Work Item description (WID):   ~~The~~ description of a Work Item in a standard Work Item Description sheet~~.~~

work task: sub-division of a building block, representing a self-contained, well-scoped and well-scheduled item of work

3   General responsibilities of the Support Team

The Support Team is responsible for the management of the work of the TSG~~s~~. This includes editorship and management of specifications once they have been put under TSG change control. It also includes preparation of and support for the meetings (including meeting reports) of the TSG~~s~~ and ~~its~~ their Working ~~g~~Groups, and subgroups in descending priority~~.~~

~~TSG > TSG WG > other TSG WG SG.~~

It furthermore includes liaison ~~to~~ with other bodies and relevant groups and institutions.

4   Handling of Specifications

~~This section describes the general procedures and events involved in, and related to, the lifetime of a specification.~~

# 4.0	Numbering scheme

The specifications shall be numbered according to the following scheme:

3G TS aa.bbb (for Technical Specifications); or

3G TR aa.bbb	(for Technical Reports).

The fields aa and bbb shall selected according to the nature of the specification as given in tables 1 and 2. The provisions of table 1 shall be strictly enforced, but those of table 2 should be used for guidance: it is acceptable to deviate from these provisions for backwards compatibility or other reasons.

Table 1: Specification number ranges aa

Range	Use	Remarks
21.bbb	Requirements specifications	Often transient specifications containing requirements leading to other specifications; may become obsolete when technical solutions have been fully specified; they could then, e.g., be replaced by reports describing the performance of the system, they could be deleted without replacement, or be kept for historical reasons but treated as background material.
22.bbb	Service aspects	Services, service features, building blocks or platforms for services (a service feature or service building block may provide certain generic functionality for the composition of a service, including the control by the user; a platform may comprise one or more network elements, e.g. UIM, mobile terminal, auxiliary system to the core network etc.); also appropriate stage 1 specifications; also reports defining services which can be realized by generic building blocks etc.
23.bbb	Technical realization	Mainly stage 2 specifications (or specifications of a similar nature describing interworking over several interfaces, the behaviour in unexceptional cases, etc.).
24.bbb	Signalling protocols (UE to CN)	Detailed and bit-exact stage 3 specifications of protocols between MS/UE and the Core Network.
25.bbb	UTRA aspects	25.1bb: UTRAN radio performance 25.2bb: UTRA layer 1 25.3bb: UMTS layers 2 & 3 25.4bb: UTRAN Iub, Iur & Iu interfaces
26.bbb	Codecs	Speech and other codecs (video etc.).
27.bbb	Data	Functions necessary to support data applications.
28.bbb	(reserved)	
29.bbb	Core Network signalling protocols	Detailed and bit-exact stage 3 specifications of protocols within the Core Network.
30.bbb	Programme management	3rd Generation Mobile System, project plans / project work programme and stand-alone documents for major work items.
31.bbb	UIM	User Identity Module (UIM) and the interfaces between UIM and other entities.
32.bbb	Operation and maintenance	Application of TMN for the 3GPP 3rd Generation Mobile System and other functions for operation, administration and maintenance of a 3rd Generation Mobile System network.
33.bbb	Security aspects	
34.bbb	Test specifications	
35.bbb	Algorithms	Specifications of encryption algorithms for confidentiality and authentication, etc.

Table 2: Specification number ranges bbb

Range	Use	Remarks
aa.0bb	Specifications applicable to both 2G (GSM) and 3G systems.	For most specifications in this range for a given Release, a GSM specification numbered [aa - 20].[bb] will have existed for earlier Releases. Example: 3G TS 28.032 replaces GSM 08.32 for Release 1999 onwards.
aa.1bb	Specification either (a) derived from earlier 2G (GSM) specification, but with technical modification; or (b) new specifications.	For most specifications in this range for a given Release, a GSM specification numbered [aa - 20].[bbb - 100] will have existed for earlier Releases, and may continue to exist (in parallel) for the same Release. Example: 3G TS 28.133 will have been based on GSM 08.33, but both specifications exist for Release 1999 onwards.
aa.2bb to aa.7bb	New specifications.	Not, in general, derived from GSM predecessors. NOTE: See table 1 for specific allocation within 25.bbb series.
aa.8bb	Technical Reports not intended for publication.	Working documents of 3GPP Groups not intended to be transposed into publications by the Partner Organizations.
aa.9bb	Technical Reports intended for publication.	As distinct from those of the aa.8bb series.

4.0A   Version nomenclature

Each specification is associated with a "version number" in the form x.y.z which uniquely identifies the document. The significance of the three fields is defined in table 3.

Table 3: Version number fields

Field	Use	Remarks
x	major also referred to as "release"	0: draft 1: presented to TSG for information (specification estimated by prime responsible Group to be at least 60% stable) 2: presented to TSG for approval (specification estimated by prime responsible Group to be at least 80% stable) 3 or greater: approved by TSG and under change control; the value indicates the Release according to table 4.
y	technical	Incremented every time a technical change is introduced into the specification. Once under change control, such changes shall only occur when the TSG approves one or more Change Requests. Reset to zero every time the "major" field is incremented.
z	editorial	Incremented every time a purely editorial change is introduced into the specification. Reset to zero every time the "technical" field is incremented or reset to zero.

Table 3 shows the estimated degree of stability to be used as a guideline for determining when to raise a specification to version 1.y.z and to 2.y.z. Such figures are obviously subjective, and the decision is ultimately at the discretion of the responsible Group.

4.3   Releases

Specifications are grouped into "Releases". A mobile system can be constructed based on the set of all specifications which comprise a given Release. A Release differs from the previous Release by having added functionality introduced as a result of ongoing standardization work within the Groups.

Specifications pertaining to a given Release shall be distinguished by the first field of the version number ("x" in x.y.z) according to table 4. Table 4 also shows for comparison the equivalent significance of the GSM Releases.

For further details on Release control, see clause **Error! Reference source not found.**.

Table 4: Version numbers vs. Releases

version	GSM Phase/Release (2G)	UMTS Release (3G)
0.y.z	See table 3.	
1.y.z	See table 3.	
2.y.z	See table 3.	
3.y.z	Phase 1	Release 1999
4.y.z	Phase 2	Release 2000
5.y.z	Phase 2+ Release 1996	
6.y.z	Phase 2+ Release 1997	
7.y.z	Phase 2+ Release 1998	
8.y.z	Phase 2+ Release 1999	
NOTE:	GSM specifications transferred to 3GPP for Release 2000 onwards follow the version numbering of the UMTS specifications; they are distinguished from prior Releases by virtue of having modified specification numbers.	

4.1   Overview

This section gives an overview on the development of a specification, dealing with the unexceptional cases only, and leaving out details. A more detailed description is given in the remainder of section 4.

A new specification is shall be created in an TSG WGGroup. At creation, a rapporteur is nominatedshall be appointed. The rapporteur shall produce elaborates the first versionsan initial draft, version 0.0.0, and subsequent revised versions (version 0.1.0, possibly 0.1.1, 0.1.2 and so on, then version 0.2.0 etc.).

The rules for drafting specifications, and the software tools to be used are listed in 3G TR 21.801.

The Vversions 0.1.0, 0.2.0, 0.3.0 etc. should be presented to the responsible TSG WGGroup. The vVersions 0.i.1, 0.i.2 etc. may be internal versions to the drafting group.

Further drafts may be produced, with appropriate increments in the "technical" / "editorial" fields of the version number. Every new draft with an incremented "technical" version field shall be presented to the responsible Group. Although two or more Groups may have an interest in contributing to the development of a specification, ultimate responsibility vests in a single (responsible) Group. The responsible Group shall ensure that all other Groups which might have an interest are given the opportunity to participate in the drafting.

The Support Team is responsible for allocating specification numbers. As soon as title, scope and some other information on the specification is stable, the Support Team shall assigns a specification number according to the provisions of subclause 4.0 and shall enters the specification into the Status List of Specifications, (see section clause 7). The TSG Sub-Group responsible for the specification shall inform its parent TSG that such a new specification is under construction.

When a specification is sufficiently stable (see table 3), it is shall be presented as converted to version 1.0.0 (with no technical changes with respect to the previous version 0.y.z) by the Support Team, and presented to the TSG for information. Further drafts bearing version numbers 1.y.z may be produced until the specification is sufficiently stable to be approved by the TSG. At this stage, and until formal approval by the TSG, the specification is, unless it belongs directly to a TSG, under the control of the responsible TSG Sub-Group. The modalities governing the introduction of changes shall be decided on a case by case basis by the WG concerned.

Once the responsible Group considers that the draft is sufficiently stable (see table 3) that it is desirable to place it under change control, the latest version 1.y.z shall be converted to version 2.0.0 (with no technical changes with respect to the previous version 1.y.z) by the Support Team and Further versions 1.x.y are elaborated until version 2.0.0 is presented for approval at the TSG.

If the TSG does not approve the draft, further drafts version 2.y.z may be produced by the responsible Group.

If the TSG does approve the draft, the approved version (with no technical changes) shall be converted to version x.0.0 where "x" corresponds to the Release identity given in table 4.

NOTE:	It is thus quite normal that a 3G specification approved for, say, Release 2000, jumps directly from version 2.0.0 to version 4.0.0; there is no Release 1999 document, therefore no version 3.y.z.

After approval, the specification becomes version x.0.0 where x >=3. It is The specification shall now be under TSG change control. Further changes are shall be made by means of formal change requests, to be approved by the TSG. The number x is called the major version of the specification. If all change requests approved were editorial, the new version increments the right most number (e.g., from 7.2.1 to 7.2.2); if at least one approved CR has been non-editorial, On approval of a CR, the middle number shall be is incremented and the right-most number reset to 0 (e.g., from 7.2.1 to 7.3.0).

At some point in time, the specification is frozen: Only corrections of essential errors will be applicable. (At the same time, a new major version may be developed for inclusion of new features.)

At a later point in time, the specification is closed: it is still publicly available, but no changes are carried out any more. (At the same time, higher major versions of the specification may be under development.)

The major versions of specifications may be developed in releases: Releases like Release 1999, Release 2000, Release 20001 are specified in major versions of the specifications. For example, 3rd Generation Release 1999 might be specified in the most recent versions 3.x.y of specifications, that is in major version 7.

[Example:	The concept of major versions has been applied for GSM specifications: Major version 5 specifies Release 1996, major version 6 specifies Release 1997 and so on.]

## 4.2	Characteristics of a specification

-	The specification has a prime responsible TSG.

-	The specification may have a prime responsible TSG WG.

-	 The specification may have one or more secondary responsible TSGs and/or TSG WGs.

-	The specification may have a prime responsible TSG Sub-Group below a Working Group as decided by the prime responsible TSG WGWorking Group.

-	The specification should shall have a rapporteur (i.e., at least one rapporteur): a delegate from a member company (or, in exceptional cases, a Support Team expert); the delegate should participates regularly in the prime responsible TSG WG (and further TSG SG if applicable).

-	The specification is a Technical Report or a Technical Specification

-	A specification has versions which are identified by three numbers w.x.y where w is called the major version (see 4.0A).

Note:	In the description above, attribute values are underlined while attributes aren't.

The prime responsible TSG WG may assign prime responsibility for a specification to one of its subgroups.

## 4.3	Characteristics of a major version of a specification.

A major version 0 or 1 or 2 of a specification has the following characteristics:

-	It is either a **draft** or **withdrawn**.

-	It is **TSG internal**.

A major version w > 2 of a specification has the following characteristics:

-	It is either **under TSG WG Change Control** or **under TSG Change Control** or **closed** or **withdrawn**.

- It is either ~~authorised~~<u>authorized</u> **for publication** or **TSG internal**.

A major version of a specification under TSG WG Change Control is TSG internal.

A major version under TSG WG Change Control or TSG Change Control is called major version under Change Control.

A major version of a specification under TSG Change Control is

- either **not yet frozen** or **frozen**.

Note: In the description above, attribute values are ~~underlined~~ **bold** ~~while attributes aren't~~.

4.4   Characteristics of a version of a specification

0.x.y	- draft (or withdrawn) - TSG internal - no version of the specification has been presented for information to the TSG yet - no major version of the specification is under TSG change control yet
1.0.0	- draft (or withdrawn) - TSG internal - this version 1.0.0 is presented to TSG - for information - or for information and approval - no major version of the specification has been under TSG Change Control yet
1.x.y (x > 0 or y > 0)	- draft (or withdrawn) - earlier version 1.0.0 has been presented for information to the TSG - no major version of the specification is under TSG Change Control yet
2.0.0	- draft or withdrawn - TSG internal - earlier version 1.0.0 has been presented for information to the TSG - this version 2.0.0 is presented to the TSG for approval - no version of the specification has been approved yet - no major version of the specification has been under TSG Change Control yet
2.x.y (x > 0 or y > 0)	- draft - TSG internal [- earlier version 1.0.0 has been presented for information to the TSG] - no major version of the specification is under TSG Change Control yet - earlier version 2.0.0 had been presented to the TSG for approval but had not been approved by the TSG
x.y.z (x ≥ 3)	- under TSG Change Control or closed - TSG internal or ~~authorised~~<u>authorized</u> for publication [- earlier version 1.0.0 has been presented for information to the TSG] - earlier major versions of the specification, if any, shall be under TSG Change Control or closed or withdrawn
draft y.z of version x	- under TSG WG Change Control - TSG internal [- earlier version 1.0.0 has been presented for information to TSG] - earlier major versions of the specification, if any, shall be under TSG Change Control or closed or withdrawn

Notes: ~~In a future version, file name conventions should be added in the table above.~~

In the table above, statements between square brackets are true but not relevant. The first two lines of each row are implied by section 4.2.

4.5   Actions on a specification(void)

4.5.1   Actions on a new specification (version 0.x.y)

A new specification (a specification version 0.0.0) may be created by a TSG WG. A rapporteur (more exactly: at least one rapporteur) is assigned by that WG. A prime responsible subgroup of the TSG WG may be allocated by the TSG WG.

The rapporteur prepares version 0.1.0 and presents it to the prime responsible TSG WG/SG for discussion.

In an iterative process, the rapporteur prepares a new version 0.x+1.0 incorporating comments from the prime responsible TSG WG/SG to versions 0.x.y and presents version 0.x+1.0 to the prime responsible TSG WG/SG for discussion.

Between version 0.x.0 and 0.x+1.0, the rapporteur may create versions 0.x.1, 0.x.2, … with only editorial modifications.

When the title and scope of a specification is sufficiently stable, a Specification Number is assigned by the Support Team , which also informs the other relevant Technical Bodies.

The TSG WG reports the creation of a new specification to the TSG.

New specifications should be co-ordinated between the TSGs and, if GSM is concerned, SMG. These bodies should seek agreement on prime and secondary responsibilities for each specification. In areas of common interest it is recommended to agree on new specifications in joint meetings.

The TSG may cancel a new specification.

The TSG WG may decide to present a specification version 0.x.y to the prime responsible TSG and to the secondary responsible TSG SG(s) for information; the specification should then be to at least 60 stable.

The TSG WG may also conclude that the specification is already to at least 80% stable and decide to present it to the TSG for information and approval; before doing that, comments from secondary responsible TSG SGs, if any, should have been taken into account.

Then the specification is handed over to the Support Team for the necessary - strictly editorial - cleaning up resulting in version 1.0.0.

4.5.2   Actions on version 1.x.y of a specification

On decision of the prime responsible TSG WG, the Support Team transforms version 0.x.y of a specification into version 1.0.0, performing the necessary - strictly editorial - cleaning up, and version 1.0.0 is presented by the TSG WG to the to the prime responsible TSG and to the secondary responsible TSG WG(s) for information or for information and approval.

The TSG may decide to put the specification under change control as major version x (where x > 2 depends on the Release which the specification belongs to). In this case, version 1.0.0 is transformed by the Support Team into version x.0.0, and the further handling is described in section 4.5.4. Otherwise, the handling of the specification continues as described below:

In an iterative process, the rapporteur prepares a new version 1.x+1.0 incorporating comments from the prime and secondary responsible TSG SGs to versions 1.x.y and presents version 1.x+1.0 to the prime and secondary responsible TSG SGs for discussion.

Between version 1.x.0 and 1.x+1.0, the rapporteur may create versions 1.x.1, 1.x.2, … with only editorial modifications.

The prime responsible TSG WG may decide to present a specification version 1.x.y to the prime responsible TSG for approval; the specification should then be to at least 80% stable; comments of the secondary responsible TSG SGs should have been taken into account.

Then the specification is handed over to the Support Team for the necessary - strictly editorial - cleaning up resulting in version 2.0.0.

### 4.5.3	Actions on version 2.x.y of a specification

On decision of the prime responsible TSG WG, the Support Team transforms version 1.x.y of a specification into version 2.0.0, performing the necessary - strictly editorial - cleaning up, and version 2.0.0 is presented by the prime responsible TSG WG to the prime responsible TSG for approval; comments of the secondary responsible TSG SGs should have been taken into account. If version 2.0.0 is not approved, work continues with versions 2.x.y.

The TSG may decide to put the specification under change control. In this case, version 2.0.0 is transformed by the Support Team into version x.0.0, (where x > 2, see section a.4), and the further handling is described in section 4.5.4. Otherwise, the handling of the specification continues as described below:

In an iterative process, the rapporteur prepares a new version 2.x+1.0 incorporating comments from the prime and secondary responsible TSG SGs to versions 2.x.y and presents version 2.x+1.0 to the prime and secondary responsible TSG SGs for discussion.

Between version 2.x.0 and 2.x+1.0, the rapporteur may create versions 2.x.1, 2.x.2, ... with only editorial modifications.

The prime responsible TSG WG may decide to present a specification version 2.x.y to the TSG for approval; the specification should then be to at least 80% stable; comments of the secondary responsible TSG WGs should have been taken into account.

Then the specification is handed over to the Support Team for the necessary - strictly editorial - cleaning up resulting in version 2.x+1.0.

### 4.5.4	Actions on version w.x.y of a specification (w > 2)

On decision of the TSG, the Support Team transforms a version v.x.y of a specification into version w.0.0, performing the necessary - strictly editorial - cleaning up.

The prime responsible TSG WG may agree on Change Requests to the most recent version w.x.y of major version w of a specification. It will then propose these CRs to the TSG for approval, however before doing that, it has to seek comments from the secondary responsible TSG (WG)s - if any - and to take them into account (joint meetings of the appropriate TSG SGs are recommended for that purpose). If and when at least one Change Request to version w.x.y of major version w of that specification is approved by the TSG, the Support Team includes all Change Requests to version w.x.y of major version w of that specification into a new version

w.x.y+1		if all change requests approved by the TSG are editorial

w.x+1.0	if at least one change request approved by the TSG is not editorial

From a version w.x.y of major version w of a specification, the Support Team may create a new version w.x.y+1 where only changes in the front sheet, preface and history are performed (for publication purposes)

From the most recent version w.x.y of major version w of a specification, the Support Team may create a new version w.x.y+1 in agreement with the rapporteur and the prime responsible TSG WG where only strictly editorial changes are performed.

If Change Requests have been introduced incorrectly into the most recent version w.x.y of major version w of a specification, the Support Team may create a new version w.x+1.0 in agreement with the rapporteur and the prime responsible TSG WG, to correct the introduction of Change Requests.

### 4.5.5	Actions on the major version of a specification

The TSG may decide to create a new major version >2 of a specification.

- The TSG may decide to withdraw a major version of a specification.

- The TSG may decide to close a frozen major version of a specification.

- The TSG may authorise a major version >2 for publication or decide that it is TSG internal.

- The TSG may decide to freeze a major version of a specification under change control.

- The TSG may decide to unfreeze a major version of a specification under change control.

- The prime responsible TSG WG may decide to create a new major version > 2 of a specification under TSG WG Change Control.

These decisions have to be taken in agreement with all relevant TSGs (all TSGs and, if GSM is concerned, SMG).

4.6 Change Request Rregime

Modifications to specifications under TSG Change Control are decided by the TSG, on the basis of Change Requests (CR). These CRs, described in the following sections, shall in principle only be presented to the TSG after having been scrutinised by the TSG WG responsible for the concerned specification; comments from secondary responsible TSGs (if any) have to be have sought and comments have to be have taken into account.

4.6.1 Change Requests

Once a specification has been approved by the TSG and version x.0.0 (where x >= 3, corresponding to the Release - see table 4) has been produced, it shall be considered to be under change control. Any technical change which may be identified for inclusion in the specification from this point on shall be accomplished by means of a Change Request (CR).

A CR may be raised by any individual and brought to the attention of the responsible Working Group. If the change is agreed by the WG, the WG Secretary shall allocate a unique (for that specification) reference number to the CR (if this has not already been done prior to WG agreement), and shall cause its details to be entered into a CR database maintained by the Support Team and made available on the 3GPP file server. CR numbers shall not be re-used, even if a CR is ultimately rejected by the TSG. The TSG Secretary shall collate all CRs approved by the WGs of that TSG and shall bring them to the TSG for approval. For specifications which are directly under the control of a TSG, the CR shall be allocated a number and brought directly to the attention of the TSG by the TSG Secretary.

Following approval at TSG level, the Support Team person responsible for the specification shall edit the original specification to incorporate the changes of all Change Requests approved by the TSG. The new version of the specification shall then be made available on the 3GPP file server.

A Change Request shall relate to a specific version of a specification. A CR may be revised by the responsible Group; thus care shall be taken that the latest revision of a CR is presented for approval and subsequently implemented.

The TSG should approve, reject or postpone a CR in its entirety (after revision, if necessary). That is, the modifications proposed by the CR should either be accepted without change, or unconditionally rejected. For ease of management, a single Change Request should therefore pertain to a single technical topic only. Each topic can thus be cleanly accepted or rejected by the TSG.

Where two or more CRs pertain to the same (version of a) specification, the responsible Group shall check for potential interaction amongst those CRs to ensure that, if all are approved by the TSG, each is implementable without contradicting any other.

The TSG Secretary shall record the TSG's decisions (see table 5) on each CR in the meeting report.

Whenever an error or an inconsistency is discovered or when a new feature is proposed to be included, a Change Request is produced, normally by the one discovering the error but in consultation with the rapporteur and/or with the Support Team .

In the case of an essential error corrections, separate Change Requests for each affected major versions that is under TSG Change Control or TSG WG Change Control shall be produced.

~~In the case of a correction of a non-essential error, separate Change Requests for each affected major versions that is~~

> ~~- under TSG Change Control and not yet frozen or~~

> ~~- under TSG WG Change Control~~

~~shall be produced.~~

4.6.2   Change Request forms

To ensure an appropriate and consistent way of presenting and documenting Change Requests, there exist ~~standardised~~standardized front covers (forms) for CRs as well as rules on how to accurately identify the modified parts of the specification.

The purpose of the CR form itself is to provide the relevant management information of the proposed changes, e.g. such as

- Target specification with its version number,

- Source of the CR,

- Reason for the proposed change and consequences if not accepted,

- Category of proposed change (i.e. correction, change request corresponding to an earlier release change request, addition of feature, functional modification of feature, or editorial modification),

- Cross-phase compatibility aspects.

As the degree of acceptability for modifications differs between not yet frozen major versions of specifications and frozen major versions of specifications, the CRs differ on the allowed/possible Categories:

- CRs to a frozen major version of a specification can only be essential corrections: ~~whilst~~

- CRs to a not yet frozen major version of a specification can also fall into any other of the categories quoted above.

Categories of Change Requests:

Category	Meaning	Remarks
A	Correction to an earlier Release	May be done if the corresponding CR on earlier release fulfils the criteria set for the CRs on that release. But as soon as a Specification has been raised to a version corresponding to a later Release and a correction is done on an earlier Release, a CR with this category has to be generated to introduce the same changes into the later Release version(s). This category shall not be used for Release 1999.
B	Addition of feature	New feature is to be included in the Release, and *not* to the Specification itself. This will normally correspond to an identified work item. This category shall not be used for Release 1999.
C	Functional modification of feature	Any functional modification shall correspond to an identified work item. However backward compatibility shall be ensured when the issue has an impact on the UE. This category shall not be used for Release 1999.
D	Editorial modification	Editorial modification shall have no impact on an implication.
E	(not used)	
F	Correction	Used: 1 to correct an error in the specification; or 2 to add a part of a functionality agreed for the Release found to be missing in the specification; or 3 to correct an approved CR that has been incorrectly implemented. Corrections can lead to functional modification, but these shall be considered as category F.

The actual CR forms to be applied and guidance how to apply them are distributed by the Support Team . The access to them is described in an annex of each TSG plenary report.

The Change Request form, with embedded instructions for use, is available from the 3GPP file server (http://www.3gpp.org/ftp/Information/).

The CR database is available from the 3GPP file server (http://www.3gpp.org/ftp/Information/Databases/Change_Request/).

4.6.3   Contents of Change Requests

Although the CR form shall indicate the details of change, each CR shall have attached the pages of the specification that are affected by the CR, using the latest version of the major version. These pages shall have the proposed modifications clearly marked, by means of the word processor's "revision mode", i.e. new proposed text should be double underlined (xxx) and proposed deletions should be marked by strike through (xxx), and a bar in the margin should further indicate the change.

In case there are more than one independent CR to the same part of the specification, neither of them should contain the proposed modifications from the other(s), however any potential interaction between the modifications should of course be resolved before presentation.

4.6.4   Handling of the Change Requests

Entry to the TSG WG:

A proposed CR should be brought to the relevant TSG WG or, if applicable, to the prime responsible TSG WG SGGroup primarily responsible for in charge of the specification concerned and discussed there, before presentation to the TSG. If possible it should be distributed, by the source, as soon as possible and prior to the coming TSG SG / TSG WGGroup meeting to the relevant email reflector (with a clear indication of the subject) , for the purpose of shortening discussions in meetings and to try at an as early a stage as possible to come to a widely acceptable solution. Comments from secondarily responsible TSGs (if any) have toshall be have sought and comments have to be haveshall have been taken into account before presentation to the TSG for approval.

To ease the work of the TSG SG Group and of the Support Team , a proposed CR should be presented in a form suitable for TSG WG agreement and TSG approval. If a CR is not immediately accepted it is the responsibility of the originator to shall update the CR taking into account comments and other guidelines from the relevant groups, including change of reference version if needed, and to re-present it to the TSG SGGroup.

　　Note:　　It is also highly important that the originator of the CR provides the Support Team with an electronic copy (in Word 8?, for further study) since the contents is supposed to be incorporated into the specification, by the Support Team , and re-typing of CRs is clearly a waste of resources and a possible source of errors.

All CRs shall be presented in electronic form.

CR identification:

During the course of its development, aA CR may be modified, and the CR's progress shall be indicated by allocation of a revision numbercan have different revisions: rev. 0, 1, 2, and so on. Revision 0 of a CR is the not revised CR. A given revision of a CR is applicable to a certain version of a specification. The CR identifies, to which specification, which version of the specification and which phase it applies. A given revision of a CR is uniquely defined by

- the specification it belongs to

- an alphanumeric string (the CR number) and

- the revision number (default, i.e. the value if no number is given, is 0, i.e. the original, unrevised, CR).

One CR may only apply to one version of a specification, that is to the latest version of a major version. If more than one major version of a specification exists, it may be necessary to elaborate parallel CRs for different major versions.

The uniqueness of the CR number is on a per specification basis, but independent of the major version, i.e. CR No 001 [may] exist for each specification but only once.

The CR number is shall be allocated by the Support Team . It may be allocated prior to, during or after the TSG WG Sub-Group meeting at which it is discussed but before submission to the TSG. Even though different TSG SGs Sub-Groups may have different working routines, it is beneficial and thus recommended that CR numbers are allocated no later than at TSG WG Working Group agreement.

For a given Specification, CR numbers are shall be unique and shall never be reused, not even numbers used for [early] rejected CRs. If a CR is rejected, and the responsible Group considers it useful to bring a modification of the CR to a subsequent TSG for approval, the new CR shall be allocated a new number. That is, it shall not be presented as a revision of the same CR number previously rejected.

Impact on other specifications and Joint CRs:

If the contents of the CR is such that, in isolation, isolated it makes the whole set of approved Specifications inconsistent, corresponding CRs must shall also be considered and produced. This should preferably be carried out by the originator of the CR (and his colleagues in other TSGs and TSG Sgs Groups) in advance. The Support Team is co-responsible for identifying and communicating cross--TSG and cross--TSG--WG impacts.

In principle, a CR shall not be forwarded to the TSG unless the potential impact on other specifications have has been thoroughly examined and concluded, either resulting in a 'No impact' statement or in a full and consistent set of corresponding CRs to all affected specifications. Such sets of CRs are normally should be combined into one a single document, by the Support Team , before submission to all responsible TSGs and called 'Joint CR'. An approval by all prime responsible TSGs is necessary.

If some of the corresponding CRs are to be considered by other TSG SGs Groups or TSGs, then the Support Team is shall be responsible for monitoring the result in the TSG Wgs those Groups and to submit for submitting the full set, when available, to the TSG. This might mean that in some cases the TSG WG agreed CRs are not presented to the immediately following TSG meeting due to outstanding CRs from other TSG WGs or TSG Groups.

Other "consequential" CRs, needed for reasons other than direct consistency, may be drafted, presented and agreed independently. This covers typically additions to Ttest specifications and O&M specifications. It should be noted though that iIf a CR causes an inconsistency with an existing/approved test or O&M specification, the corresponding CRs should be presented together with the core specification CR.

Handling of the CR in the TSG:

If When the TSG WG has agreed to a CR and comments from secondary responsible TSG (WG)s have been taken into account, the Support Team shall ensure that it is correctly formatted and assembled, and shall submit the CR is forwarded to the prime responsible TSG for formal approval. It is the responsibility of the Support Team to make sure that TSG WG agreed CRs are made available to the TSG, and that they are properly formatted, numbered and consistent. Likewise, it is the responsibility of the Support Team to ensure that Joint CRs are complete and put together before submission to the TSG(s).

Non-strategic CRs are submitted to the TSG for approval without presentation; strategic CRs are submitted to the TSG for approval with presentation.

The Support Team is responsible for making shall make available to the TSG summary lists of all CRs presented for decision. This list is then shall be updated to include the result show the decision reached for of each and every CR.

   Note: This list is generated from the CR database held by the Support Team , see section 7.

Decisions on CRs, and results:

The TSG considers and concludes on each strategic CR independently, except for Joint CRs which are handled and concluded together, and the verdicts could be as follows:

Table 5: TSG decision possibilities on CRs

Verdict	Meaning
Approved:	Contents to be incorporated in the specification.
Postponed:	Concept of CR seems acceptable in principle but further refinements are necessary. CR is sent back to the TSG ~~WG~~ Group for revision and possible re-submission at a later TSG meeting.
Rejected:	CR not acceptable ~~in any sense~~. Further discussions on the subject, if any, to take place within the responsible Group. ~~If further discussions on the subject should take place that shall be done on the basis of different documents and approaches.~~

~~If there is at least one Approved CR to a given specification, a new version number of the specification is allocated (see clause 4.2.3), and the Support Team will produce and issue a new version of the specification after the TSG approval.~~

Control and notification of CR decisions:

~~——~~At the end of each TSG meeting, the Support Team <u>shall</u> issue~~s~~ lists containing the detailed result of the CRs presented at the meeting, including information about the consequential new version numbers of the concerned specifications. These lists <u>shall</u> form an annex to the meeting report (and hence are part of a permanent document). These lists, being the evidence of which specifications have changed and how, are important management tools for both TSG delegates and the Support Team -since it ~~always~~ takes some time before the new versions of the specifications can be compiled and released.

~~**Databases:** See section 7.~~

4.6.5 Updating and release of new versions of the specifications

If there is at least one Approved CR to a given specification, a new version number of the specification shall be allocated (see clause 4.2.3), and the Support Team shall produce and issue a new version of the specification.

~~After TSG approval of one or more CRs, the Support Team produces a new version of the specification (with the version number incremented according to above).~~

4.6.6 Other changes to specifications

The Support Team may update a specification to correct purely editorial deficiencies brought to its attention. In this case, only the "editorial" field (third digit) of the version number shall be incremented. Such changes should be avoided if possible: normally, they should be held over for inclusion next time a technical change is made to the specification.

All such changes shall be clearly explained in the "change history" of the specification.

4.7 "Freezing" of specifications

A TSG may decide that a specification is sufficiently stable that it may be considered "frozen". That is, only CRs for essential corrections of errors shall be considered.

(At the same time, a new major version may be developed for inclusion of new features.)

4.8 "Closing" of specifications

A TSG may decide that a specification will no longer be maintained. That is, no further Change Requests should be considered. The specification remains available, but no further Change Requests should be produced, even corrective ones to align with the equivalent specification of a subsequent Release.

(At the same time, higher major versions of the specification may be under development.)

4.9   "Withdrawing" of specifications

A TSG may decide to withdraw a specification which is obsolete if its remaining available would confuse implementors (for example, if it contained provisions which were contradictory to provisions of other, later, specifications).

Before withdrawing a specification, the TSG shall ensure that no references are made to it from any other 3GPP specification (and raise appropriate Change Requests to eliminate any such references discovered).

4.10   Release control

4.10.1   Creation of a new Release version of a specification

The concept of Releases was introduced in subclause 4.3. A given specification may simultaneously exist in several versions, each corresponding to a different Release.

In principle, a Release of the specification can be identified as consisting of all those specifications with a "major" version field of a given value.

4.10.1.1 With no technical changes compared to the previous Release

A given Release consists of a set of specifications having a common "major" version field; therefore, for the set of specifications to be complete, a new specification needs to be produced even if its provisions are identical with those of the previous Release's version. The creation of such a specification shall be delayed until the latest possible moment - that is, until the TSG is on the point of declaring a given Release to be complete, having determined that no technical changes are needed in the specification compared with the previous Release.

The creation of the new version under these circumstances shall be via the responsible TSG's taking a decision to upgrade to the next Release of the specification.

This implies that all Groups need to conduct a rigorous review of all specifications for which the are responsible to determine which are to be propagated to the next Release and which are not.

4.10.1.2   When introducing technical changes

A new version of a specification, corresponding to a new Release, shall be prepared when a technical change needs to be introduced to satisfy a requirement of a feature of that new Release. This shall be accomplished by the raising of a Change Request (see clause **Error! Reference source not found.**) in the usual way, with the version number of the resulting specification indicating the new Release.

4.10.1.3   Specifications not propagated to next Release

Specifications which are not propagated from Release N-1 to Release N in one of the above two methods shall be deemed not to form part of Release N. Under these circumstances, the responsible Group shall undertake a review of all other specifications of Release N to eliminate references to the specification concerned.

4.10.2   Mirror Change Requests

When a Group produces a Change Request correcting an error in an earlier Release of a specification, it shall check whether the same change also needs to be made to later Releases of the specification. Changes which are corrective or clarificative in nature will generally be applicable to such other versions.

Where it is determined that several Releases are affected, an (independently numbered) Change Request shall be created for *each such affected version* of the specification. Such CRs are termed "mirror Change Requests".

The TSG shall approve (or postpone or reject) a CR to a given Release together with the corresponding mirror CRs to later Releases. This will provide consistency between Releases.

5   Availability and distribution of specifications

The Support Team shall make all approved versions of all specifications available as soon as possible after their approval (or after approval of CRs thereto) on a file server. The server shall allow anonymous access by any interested party.

~~The latest versions of TSG approved and TSG WG approved specifications are made available on a TSG server (exact location see TSG meeting report) by the Support Team . For specifications (or major versions of specifications) that are not yet under change control, the versions presented to the responsible TSG-SG or WG, shall be made available to the Support Team by the rapporteur and made available on a TSG server by the Support Team .~~The Support Team should also endeavour to make earlier drafts available on the server, even prior to approval, i.e. versions 0.y.z, 1.y.z and 2.y.z.

Such "availability" does not constitute formal "publication". Under the terms of the 3GPP partnership agreement, the Organizational Partners which are Standards Development Organizations will publish TSG-approved specifications in the form of their own standards. The modalities of such publication processes are specific to those individual Organizations and are beyond the scope of the present document.

The directory structure shall differentiate amongst approved and draft specifications, amongst versions of specifications approved at specific TSG meetings, amongst versions of specifications pertaining to different Releases, and between specifications relating to 2nd generation (GSM) only and 3rd generation (UMTS) systems.

A clear and unambiguous directory structure shall be adopted, and a guide to that structure provided on the server. A "status list" shall also be provided, showing the latest version of each Release of each specification.

5A   File naming conventions

Specifications shall be maintained in the form of computer-based files. The file name shall be of the form

    aabbb-xyz.eee

where:

    aa and bbb have the same significance as in the specification number (see tables 1 and 2);

    x, y and z have the same significance as in the version number (see table 6);

    eee is the de facto standard filename extension corresponding to the software tool used to create the file (normally "doc" for Microsoft Word ®).

For multi-part specifications, the filename shall be extended to

    aabbb-n-xyz.eee

Where:

    n is the part number (see table 6).

To save storage space and to speed up uploading and downloading, source files shall be saved compressed in industry standard "Zip" ® format. The filename of the zipped file shall be the same as that of the contained source file, and it shall bear the file extension ".zip".

If a specification consists of multiple source files - for example, when a very long document is divided into several smaller files for ease of editing and manipulation - , each file should be named with the above convention, but appending a file identifier in the form:

    aabbb-xyz(m).eee

where:

    m is the file number using characters from table 6.

Where a specification has accompanying files - e.g. ASN.1 coding, C programming language code, TTCN test sequences, etc. - it may not be convenient or possible to abide by the last-mentioned rule. Under these circumstances, the associated files shall be contained in a separate zip file, which shall itself abide by the multiple-source-file rule. A "readme" text file should be included in that zip file to explain the nature of each other file.

EXAMPLE 1:   29341-420.zip is the compressed file of specification 29.341 version 4.2.0.

EXAMPLE 2:   31811-m-6g2.doc is the source file of specification 31.811 part 22 version 6.16.2.

EXAMPLE 3:   22354-480(1).doc and 22354-480(2).doc are the two files which make up specification 22.354 version 4.8.0 (and which will both be compressed into file 22354-480.zip).

EXAMPLE 4:   34101-300(1).doc and 34101-300(2).zip are the source text file and the compressed set of TTCN files respectively which together comprise 34.101 version 3.0.0.

Draft versions of specifications may be made available in the responsible Groups' directories. Such versions shall be clearly distinguishable from "official" versions by substituting "d" for the hyphen before the version code. Thus:

aabbb**d**xyz.eee

(for example, 28033d410.zip). Such files shall never appear in the official specification directories.

Table 6: Characters used in filenames to represent numeric values

Value	Character	Remarks
0	0	Only for use in version number fields. Part numbers and file numbers start at 1.
1	1	
2	2	
3	3	
4	4	
5	5	
6	6	
7	7	
8	8	
9	9	
10	a	
11	b	
12	c	
13	d	
14	e	
15	f	
16	g	
17	h	
18	i	
19	j	
20	k	
21	l	
22	m	
23	n	
24	o	
25	p	
26	q	
27	r	
28	s	
29	t	
30	u	
31	v	
32	w	
33	x	
34	y	
35	z	Higher values for further study if necessary.

# 6	Work items

## 6,0	Introduction

### 6.0.1	Introduction: why manage a project?

In any complex engineering venture, it is necessary to plan the project, to monitor its progress, and to be able to determine whether it is being completed on schedule and within budget. In many ways, the concepts and constraints which apply to an engineering project can also be applied to system standardization activity.

### 6.0.2	How to manage a project?

Any project needs to have its goals defined. It is then possible to analyse the steps needed to achieve each goal, starting from the status quo.

This analysis will naturally lead to defining the new *features* which it is wished to add to the existing system.

> **Feature**:
> New, or substantially enhanced functionality which represents added value to the existing system.

A feature should be more or less self-contained - that is, each feature can be viewed as an optional extra, which can be added or not as a function of market demand. Network operators and equipment manufacturers can decide using *commercial* considerations whether or not to implement a feature. The description of a feature need not be technically precise, but should represent a concept which can be understood at a "service" level. It should answer the question: what do I get for my money? **A feature should normally embody an improved service to the customer and / or increased revenue generation potential to the supplier**.

This being the case, most features would be the responsibility of TSG-SA WG1. The ensemble of the features of a particular release of the system represents the difference between that release and the previous release.

A feature can be considered as a high-level goal for project management purposes. But most features will be quite complex, and will need to be broken down into simpler elements or building blocks for the purpose of specifying precise functionality.

> **Building block**:
> A sub-division of a feature, representing a coherent set of technical functionality which would generally be expected to reside in a single system element.

A building block shall be defined in technical terms, and its description will require an understanding of the architecture of the overall system. A building block should generally be restricted to a single physical or logical entity or a single protocol such as "terminal" or "call control". **Building blocks may be "re-usable" - that is, a single building block may be common to two or more features.** This implies a generic or object-oriented approach. A building block should normally be the responsibility of a single TSG.

In the case of very simple features, a single building block may suffice, in which case the feature and its building block are synonymous.

To implement a building block it will generally be necessary further to subdivide the functionality into smaller tasks, each representing a closely specified and easily comprehended activity. Such work tasks may not only be divided by technical content, but potentially by phase. So, for example, it is necessary fully to define service aspects (one or more work tasks) before considering functional information flows (one or more work tasks) which in turn will be followed by detailed protocol specification (one or more work tasks).

> **Work task**:
> A sub-division of a building block, representing a self-contained, well-scoped and well-scheduled item of work.

It is at this lowest hierarchical level of breakdown that estimations of work content and thus time scales can be calculated. From the estimated schedules of all work tasks which comprise a building block, and from their inter-dependences, can be derived the overall schedule for the "parent" building block. From the schedules of all component building blocks, the time-to-completion of the parent feature can be estimated. **A work task will almost certainly be the responsibility of a single Working Group.**

The output of a work task shall be:

- One or more new Technical Specifications (or Reports); and / or

- Change Requests to existing TSs / TRs.

Features, building blocks and work tasks are the three specific types of "work item".

In the case of very simple building blocks, a single work task may suffice, in which case the building block and its work task are synonymous.

> **Work item**:
> A generic term used to encompass feature, building block and work task.

All work items, whatever their class (feature, building block or work task) require

- A precise definition of content ("scope");

- An estimated schedule, with milestones to track progress if possible; (in the case of building blocks and features, the schedule can be derived from those of the component work tasks);

- A named person to act as rapporteur (in effect, the manager of the work item);

- At least four Member Organizations supporting the work item and willing to offer active participation in its realization.

~~For project management purposes, the work is itemised in Work Items (WI), which are documented, developed and handled as described in this section.~~

6,0,2 Types of modifications to specifications

The possible modifications of the specifications are basically of different natures:

- Error corrections~~:~~ ~~M~~modifications which correct overlooked errors or inconsistencies in the specifications.

- Enhancements~~:~~ ~~M~~modifications that enhance the system, e.g. by new services or features, or by improving performance or decreasing costs.

Modifications of the correction category are ongoing maintenance tasks and are handled with direct CRs and thus not by means of Work Items.

Modifications of the enhancement category are handled within the concept of Work Items ~~as described in the sections below~~. Note that prior agreement of the TSG is needed before any substantial work is launched.

6.1 Creation of a Work Item

When an enhancement of the standard is considered desirable a delegate or delegation ~~can~~ may make a proposal by submitting a Work Item Description sheet to the relevant TSG or TSG WG.

- For new services, features or functions, the TSG responsible for Services and System Aspects is the relevant TSG. This TSG ~~also~~ shall assign~~s~~ prime and, if necessary, second~~ary~~ responsible TSGs for the corresponding work items.

- For pure performance enhancements, other TSG WGs may be ~~the~~ responsible ~~TSGs~~ (the test specifications are normally not seen as independent work items).

The relevant TSG WG should study and refine the WI sheet before passing it on to the TSG for adoption.

No substantial work shall commence in a TSG WG prior to a decision of the responsible TSG.

The actual WI description sheets to be used and guidance on how to apply them are shall be distributed by the Support Team . The access to them is described in an annex of each TSG plenary report.

The TSG shall not approve a WI unless the Work Item Description (WID) sheet has been properly filled in to the degree possible at that time.

Once the TSG has approved the WI, it is included in the WI Status List and the WI Description sheet is included in the WID compilation. Both these actions are carried out by the Support Team . The WID should be updated as soon as new information is available.

The Support Team shall maintain a database of work items, and make it available on the 3GPP file server.

The effects of the WI in terms of initial work distribution and responsibilities in the TSG (WG)s must be identified and allocated. Also, one or more rapporteurs have to be identified for the initial tasks, typically one for the service aspects and one for the system requirements. This should preferably be done prior to submission to the TSG, but in the worst case during the following TSG (WG) meetings. This information is also included in the WI Status List managed by the Support Team . During the lifetime of the WI, additional responsibilities as well as output documents and corresponding rapporteurs can be identified. Similarly, this information is then included in the status list.

A work item normally implies the creation of new specification and Change Requests to existing specifications.

6.2   Type of Work Items

Modifications of the standard could in principle be of two different types:

-    New services/features/functions that in general affects several specifications and involve several TSG-SGs;

-    Pure ([technical)] enhancements that affects one ora small number of specifications and involve a single or a few TSG SGs Groups only (generally only one).

Of these, mModifications of the latter type can may be submitted to the TSG SGSub-Group(s) and then the TSG directly as a Change Request without prior presentation/agreement of a WI Description sheet. Such CRs shall instead refer to the pseudo Work Item 'Technical Enhancements'. For the other type of modifications, the following sections provisions of subclause 6.3 apply.

6.3   Start and continuation of the work and responsibilities

An early task when elaborating a work item, is to identify the tasks related to the WI and to allocate those them to the TSGs and TSG SgsSub-Groups.

In most cases the tasks from a WI can be split immediately into the following areas:

-    Service requirements

-    System/Architectural requirements and implications

-    Protocol specifications

Service requirements:

The responsibility of the service requirements can usually be allocated immediately at the creation/adoption of the WI. Occasionally other groups another Group may be given responsibility for the service requirements. This might be another TSG SG, e.g. a Task Force. In any case, however, it should be a single group and one that reports directly to the TSG.

System/Architectural requirements and implications:

AlsoIn addition, the responsibility for system/architectural requirements should be allocated immediately, even though the implications and requirements normally will be seen only after the study on service/system requirements have been initiated. The responsibility for the system/architectural requirements must shall be given to a single body to guarantee the consistency of the adopted solution.

The choice of group should not [pre-]determine the technical choices and in many cases, the responsibility for system and architectural requirement study needs a widening of the competency and a readiness to look to at a variety of technical aspects. This can be obtained either by drawing the attraction of the suitable experts (e.g., by setting special meetings or clear meeting dates) or by the organisationorganization of joint meetings.

TSG SA shall maintain tThe overall consistency of the system architecture must be maintained along with despite the numerous modifications due to various work items. This responsibility is allocated to TSG SA, which for this purpose shall ensures the co-ordination of the development of general architecture concepts and their applications to individual Work Items, and should thus also draw attention and expertise from other TSGs and TSG WGs Groupsas well.

Protocol specifications:

The responsibility for the elaboration of the protocol specifications cannot, in most cases, not be allocated at the early stages since it depends on the technical implementation choices and hence on the results of the study of the service/system requirements as well as on the architectural conclusions.

The identification of new protocols to be specified and/or existing protocols to be enhanced will shall be derived from the system/architectural requirements. In general, modifications of existing protocols are shall be done by the TSG WG in charge of the protocol in question, whilst the responsibility for development of new protocols is shall be allocated by the TSG based on proposals from the TSG WG on system/architecture. Then, whether the actual work is done in the TSG WG itself or in an ad hoc subgroup thereof is at the discretion of that TSG WG.

6.4   Realisation Realization of Work Items

6.4.1   Planning and categorisation categorization of the deliverables (and control thereof)

Planning:

An initial time plan should be set up at an early point. As a basis, the time plan should include at least the following points:

1.   Presentation for principle agreement of the service requirements;

2.   Presentation for principle agreement of the architectural/system implications and requirements;

3.   Presentation for information of the drafts of all needed deliverables,

4.   Presentation for approval of all needed deliverables.

The time plane shall includes realistically achievable dates for each step and should be part of the Status List.

The WI Status List shall also contains also information/lists about existing and planned permanent and semi-permanent documents related to the WI, e.g. future specifications as well as interim/temporary requirements "specifications", including the responsible TSG GroupSG/group, the rapporteur, the state of the documents, expected completion dates, etc.

Categorizsation:

Before the substantial work on a Work Item starts, the WI shall be examined in the light of its technical and commercial dependency with respect to the existing specifications as well as with respect to other Work Items. Aspects that must shall be considered and settled at an early stage are:

-   Required versus acceptable time scales;

-   Whether the WI has an impact on User Equipment or not;

- Whether the WI has an architectural impact or not;

- To which degree the WI needs to ~~be standardise~~ specify (and hence how much can be left "open", to speed up the work);

- Whether the WI can be technically and/or commercially combined/grouped with other WIs;

Unless the above aspects are sorted out ~~in~~ at the beginning of (or prior to) the work, the risk of getting inefficient and non-optimal specifications increases and the control of the work becomes difficult and unmanageable.

~~These aspects are also contained in the WI Status List.~~

6.4.2 Choice of deliverables

The WI will be ~~realised~~ realized as new specifications and/or amendments to existing specifications; the exact structure lies with the individual TSG ~~SGs~~ Sub-Groups and the TSG. Typically, a new feature may result in at least three completely new specifications (~~s~~Stages 1, 2 and 3) but may also cause amendments to the major protocol specifications.

6.4.3 Contents of deliverables

6.4.3.1 Service ~~r~~Requirements

This task, allocated and controlled according to the provisions above ~~clauses~~, consists in describing in details the aim of the work item, as seen by those for which a service is provided, e.g. end users, operators, service providers, etc.

~~Apart from the general rules on how to write specifications, certain state of the art ways of producing service requirements specifications are established in the TSG, but as most new types of service differ in nature and structure from each other, no detailed rules are written.~~

In many cases it is ~~preferred~~ desirable that, prior to the actual service requirements specification being produced, an initial combined service and system/architectural requirements and considerations document is produced, involving both service oriented and implementation expertise. In particular when an ad hoc ~~T~~task ~~F~~force is charged with performing a study on a certain WI (aspect) such a starting point document ~~is~~ should be produced and then used as a basis for the TSG SGs when carrying out the detailed work on service requirements/descriptions and technical reali~~s~~zation specifications. Such setting-the-basis documents ~~are~~ should generally kept for some time after the actual work on the detailed specifications has progressed to a mature level (mainly for the purpose of easing the understanding and to shorten the interaction and negotiation period between service requirements and system/architectural and technical restrictions).

Such 'setting-the-basis' document can also be used to describe the project management of a work item (to collect all prepared but not yet approved CRs related to the WI in question ~~and so on~~).

6.4.3.2 Technical reali~~s~~zation specifications

~~This~~ These ~~covers~~ both the overall architectural and interface specific detailed specifications. The architectural implications and requirements need to be identified at a very early stage, for the purpose of knowing which parts of the standard (and hence of the system) are affected by a WI, and for the purpose of supporting the identification of cross-WI similarities (and hence more overall efficient solutions).

The overall co-ordination of the architectural/system requirements is with a single group as stated above, whilst the ensuing detailed protocol definitions and specifications may be distributed over several groups (according to their scope).

6.4.3.3 Test ~~S~~specifications

Changes to the core specifications may have impact on the test specifications. The corresponding changes to test specifications should be approved before publication the new core specifications.

6.5   ~~Closing~~ Completion of Work Items

When all necessary modifications for a given Work Item (or group of Work Items) are completed ~~all over the scope of the system~~, and all the corresponding new specifications and Change Requests have been approved and released, then the Work Item ~~is~~ may be officially closed.

6.6   Work item model

The model described below can be thought of as a reference model for structuring the work. It is not the intention to rigorously enforce the usage of the model on all ongoing work, but merely to use it as the common reference model across the TSGs and to structure future work.

The description below uses TSG SA as an illustration; it can easily be extended to apply to any TSG (or combination of TSGs).

TSG SA is, through S1, responsible for defining the features and services required in the 3GPP specifications. S1 is responsible of producing the stage 1 descriptions (requirements) for the relevant features and passing them to S2. S1 may also forward their considerations on possible architecture and implementation to S2, but is not responsible for this part of the work.

S2 should then define the architecture for the features and the system, and then divide the features into building blocks based on the architectural decisions made in S2. S2 shall then forward the building blocks to the relevant TSGs for the detailed work. These proposals shall be reviewed and discussed in an interactive way together with TSGs/WGs, until a common understanding of the required work is reached. During the detailed the work of the TSGs and their working groups, S2 shall be kept informed about the progress.

The TSGs and their WGs treat the building block as one or several dedicated work tasks. Typical output of a work task is new specification(s), updated specification(s), technical report(s) or the conclusion that the necessary support is already provided in the existing specifications.

S2's role is in co-operation with the TSGs and their WGs to identify if synergy can be obtained by using some of the building blocks for more than one feature. Part of S2's task is to verify that all required work for a full system specification of the features relevant will take place within 3GPP without overlap between groups. In order for S2 to be successful, this has to be done in co-operation with other TSGs/WGs.

The following guidelines are proposed for project scheduling. S1sets a target, S2 performs a first technical review and comments on the target. S2 indicates target for time schedule together with allocation of the defined building blocks. The TSGs and their WGs comment back on these targets. S2 tries if necessary to align the new target amongst the involved parties. S1 and SA are kept informed of the overall schedule.

It is the task of TSG SA, S1 and S2 to ensure early involvement of S3 to ensure that the potential security requirements, service requirements and the architectural requirements are aligned and communicated to the TSGs and their WGs.

In order for TSG T and its subgroups to plan and perform their horizontal tasks on conformance testing and mobile station capabilities, S2 should invite TSG T to evaluate the potential impact of a new feature. If work on horizontal tasks are required, this should be included in the overall work plan.
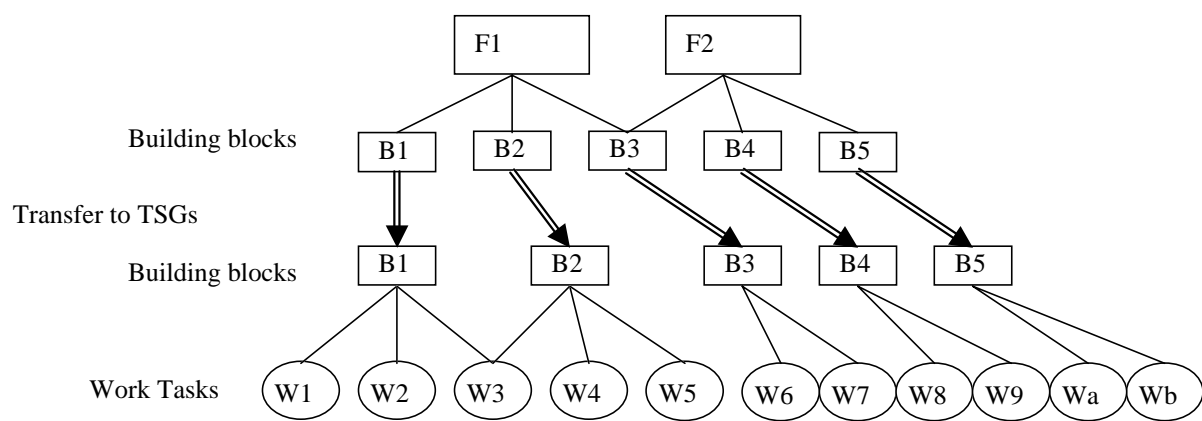
Figure 1

7 Management documents and tools

This clause summariszes and lists the various permanent or semi-permanent documents (and means of documenting).

All these documents/tools are within the responsibilities of the Support Team and or TSG SA

7.1 Status List of Specifications

This list (data base) contains information about all 3GPP specifications, in terms of specification number, title, latest version,- rapporteur and other details. The current list shall be annexed to every TSG SA meeting report.

7.2 Work Item Status List

This data base contains information about all 3GPP work items, in terms of identified future specifications, identified specifications to be amended, supplementary/temporary documentation, expected/planned completion dates and intermediary milestones, and other management information related to specifications, responsible TSG Sub-Groups, rapporteurs, completion dates etc..

7.3 Change Request data base

The Change Request data base records all CRs to specifications.

7.4 Mailing lists and Membership data bases

The members data base contains information of all delegates in the 3GPP TSG.

7.5 Electronic tools used/preferred

For the various types of documents and parts of documents of 3GPP, a minimum variety of word processors etc. should be used. Those identified in 3G TR 21.801 are permitted. The following lists those tools to be used for documents:

Type	Tool(s)	Comments
Text	Microsoft Word 97 (SR-2)	
Graphics	Micrografx Designer version 7.0	
	MS Draw 98	Freeware from Microsoft. The built-in drawing package of Word is not recommended.

SDL, MSC,	Telelogic SDT version 3.2	Rapporteurs can obtain, as a loan, this software from ETSI
TTCN	Telelogic ITEX version 3.4	
Databases	Microsoft Access 97 (SR-2)	
General Tools	Microsoft Office 97 software Suite (Excel 97, Powerpoint 97, etc.)	