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Technical Report

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Technical Specification Group working methods
(3GPP TR 21.900 version 6.1.0 Release 6)**

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Foreword

This Technical Report (TR) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp .

Contents

Foreword

This Technical Specification 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.

Introduction

In order to ensure correctness and consistency of the specifications (i.e., technical specifications and technical reports) under responsibility of the Technical Specification Groups (TSG) of the 3rd Generation Partnership Project (3GPP), clear, manageable and efficient mechanisms are necessary to handle version control, change control, document updating, distribution and management.

Also, the fact that the specifications are/will be implemented by industry almost in parallel with the writing of them requires strict and fast procedures for handling of changes to the specifications.

It is very important that the changes that are brought into the standard, from the past, at present and in the future, are well documented and controlled, so that technical consistency and backwards tracing are ensured.

The 3GPP TSGs, and their sub-groups together with the Support Team are responsible for the technical content and consistency of the specifications whilst the Support Team alone is responsible for the proper management of the entire documentation, including specifications, meeting documents, administrative information and information exchange with other bodies.

1 Scope

This document outlines the working methods to be used by the 3GPP Technical Specification Groups and their Working Groups and their Sub-Groups, 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 Sub-Groups. From the Technical Specification Group point of view, a task and responsibility is given to a Working Group directly answering to the Technical Specification Group. In practice, the work/task may be carried out in a subgroup of that Working 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. 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*.

3GPP TR 21.801: "Specification drafting rules".

3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

3GPP TS 21.101: "Technical Specifications and Technical Reports for a UTRAN-based 3GPP system".

3GPP TS 41.101: "Technical Specifications and Technical Reports for a GERAN-based 3GPP system".

ITU-T Recommendation I.130: "Method for the characterization of telecommunication services supported by an ISDN and network capabilities of an ISDN".

2 Definitions and abbreviations

For the purposes of the present document, the following terms and those in 3GPP 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: procedure whereby proposed modifications to a specification are presented for approval to the TSG as formal Change Requests.

closed: specification status in which no changes of any kind to the specification are permitted.

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

draft: 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: specification status in which only essential corrections are permitted.

Group: TSG or TSG Sub-Group.

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

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

specification: generic term standing for Technical Specification and Technical Report.

TSG: Technical Specification Group.

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

TSG Sub-Group: Working Group or subgroup of a Working Group or of a Sub-Group.

Working Group (WG): official subgroup of a TSG reporting to that TSG.

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

version: unique identifier in the form x.y.z for a specification at a given point in time.

Example: version 3.12.3.

withdrawn: specification status in which the given version of the specification no longer belongs to the appropriate set of valid specifications.

Work Item (WI): description of an enhancement to a technical area, which may be categorized as feature, building block or work task.

Work Item description (WID): 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 TSGs. 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 TSGs and their Working Groups, and subgroups in descending priority.

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

4 Handling of Specifications

4.0 Numbering scheme

The specifications shall be numbered according to the following scheme:

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

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

The fields aa and bbb shall be 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 for GSM up to and including Release 1999	Range for GSM Release 4 onwards	Range for UMTS Release 1999 onwards	Use	Remarks
01.bb	41.bbb	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.
02.bb	42.bbb	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.
03.bb	43.bbb	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.).
04.bb	44.bbb	24.bbb	Signalling protocols (UE to CN)	Detailed and bit-exact stage 3 specifications of protocols between MS/UE and the Core Network.
05.bb	45.bbb	25.bbb	Radio access aspects	25.1bb: UTRAN radio performance 25.2bb: UTRA layer 1 25.3bb: UTRA layers 2 & 3 25.4bb: UTRAN Iub, Iur & Iu interfaces
06.bb	46.bbb	26.bbb	Codecs	Speech and other codecs (video etc.).
07.bb	47.bbb	27.bbb	Data	Functions necessary to support data applications.
08.bb	48.bbb	28.bbb	Signalling protocols (RSS to CN)	Detailed and bit-exact stage 3 specifications of protocols between radio subsystem (eg BSS) and periphery of CN (eg MSC). (Not used in Release 1999.)
09.bb	49.bbb	29.bbb	Core Network signalling protocols	Detailed and bit-exact stage 3 specifications of protocols within the Core Network.
10.bb	50.bbb	30.bbb	Programme management	3rd Generation Mobile System, project plans / project work programme and stand-alone documents for major work items.

Range for GSM up to and including Release 1999	Range for GSM Release 4 onwards	Range for UMTS Release 1999 onwards	Use	Remarks
11.bb	51.bbb	31.bbb	SIM / UIM	Subscriber / User Identity Module and the interfaces between it and other entities.
12.bb	52.bbb	32.bbb	Charging and OAM&P (Operations, Administration, Maintenance & Provisioning)	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.
13.bb				*Regulatory test specifications. (Transferred from ETSI TC SMG to ETSI TC MSG.)*
		33.bbb	Security aspects	
		34.bbb	Test specifications	
		35.bbb	Algorithms	Specifications of encryption algorithms for confidentiality and authentication, etc.
NOTE: Column 1 refers to the original GSM specification series used up to Release 1999. Column 2 refers to the specifications peculiar to GSM implementations for Release 4 onwards – that is, those specifications relating solely to GSM/EDGE radio access. Column 3 refers to the specifications created by 3GPP for Release 1999 onwards implementations having a UTRAN radio access. Many of these are common to GSM/EDGE and UTRAN systems (see table 2). Separate specifications list the specs required to implement Releases GSM/EDGE and UTRAN systems (3GPP TSs 21.101, 01.01 / 41.101).				

Table 2: Specification number ranges bbb

Range	Use	Remarks
aa.bb	Specification applicable to pre-Release-4 GSM systems.	Continue to be maintained by 3GPP. Not propagated beyond Release 1999.
aa.0bb	Specifications applicable to both 2G (GSM) and 3G systems.	**aa in range 21 to 39:** For most specifications in this range for a given Release, a GSM specification numbered [aa - 20].[bb] will have existed for earlier Releases. Example: 3GPP TS 28.032 replaces GSM 08.32 for Release 1999 onwards. **aa in range 41 to 59:** Direct equivalent to aa.bb GSM specification for previous Releases.
aa.1bb	Specification either (a) derived from earlier 2G (GSM) specification, but with technical modification; or (b) new specifications.	**aa in range 21 to 39:** 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: 3GPP TS 28.133 will have been based on GSM 08.33, but both specifications exist for Release 1999 onwards. **aa in range 41 to 59:** New GSM specification for Release 4 or later.
aa.2bb to aa.7bb	New specifications.	Not, in general, derived from pre-Release 4 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.

4.0B 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 0 also shows for comparison the equivalent significance of the GSM Releases.

For further details on Release control, see subclause 4.10.

Table 4: Version numbers vs. Releases

Spec under change control for …		**spec number format and version**
GSM Phase 1		aa.bb v3.y.z
GSM Phase 2		aa.bb v4.y.z
GSM Phase 2+	**Release 1996**	aa.bb v5.y.z
GSM Phase 2+	**Release 1997**	aa.bb v6.y.z
GSM Phase 2+	**Release 1998**	aa.bb v7.y.z
GSM Phase 2+	**Release 1999**	aa.bb v8.y.z
3GPP (excl GSM)	**Release 1999**	aa.bbb v3.y.z
3GPP	**Release 4**	aa.bbb v4.y.z
3GPP	**Release 5**	aa.bbb v5.y.z
…		…
NOTE: From Release 4 onwards the 3GPP format for specification numbers and versions applies to all specifications (including those only relevant for implementation of a stand-alone GSM system).		

4.1 Overview

Where appropriate, the three-stage methodology defined in ITU-T Recommendation I.130 should be employed:

Stage 1 is an overall service description from the user's standpoint.

Stage 2 is an overall description of the organization of the network functions to map service requirements into network capabilities.

Stage 3 is the definition of switching and signalling capabilities needed to support services defined in stage 1.

In addition, it is often appropriate to perform a feasibility study prior to formal specification work. This is sometimes referred to as "stage 0".

Furthermore, it will often be appropriate to follow stage 3 with the production of test specifications – a stage 4.

4.1.1 General

A new specification shall be created in a Group. At creation, a rapporteur shall be appointed. The rapporteur shall produce an 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.). Details of the role of the rapporteur are described in subclause 4.1.2.

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

Versions 0.1.0, 0.2.0, 0.3.0 etc. should be presented to the responsible Group. Versions 0.i.1, 0.i.2 etc. may be internal 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 assign a specification number according to the provisions of subclause 4.0 and shall enter the specification into the Status List of Specifications (see 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 shall be 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 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 3GPP specification approved for, say, Release 4, jumps directly from version 2.0.0 to version 4.0.0; there is no Release 1999 document, therefore no version 3.y.z.

The specification shall now be under TSG change control. Further changes shall be made by means of formal change requests, to be approved by the TSG. On approval of a CR, the middle number shall be incremented and the right-most number reset to 0 (e.g., from 7.2.1 to 7.3.0).

4.1.2 Role of the rapporteur

The role of the rapporteur is to:

- Serve as Editor (following the guidance of the WG) until the specification is placed under change control.
- Deliver a clean specification to the MCC for editorial clean-up before submission for TSG approval to come under change control.

and, in co-operation with MCC, to:

- Review all CRs to the specification prior to agreement in the Working Group. This includes identifying and resolving clashes.
- Oversee the technical quality of the specification.
- Explain the specification to any other group (TSC, TSG, inside or outside 3GPP), where appropriate.
- Serve as focal point for technical questions.

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 Working Group.
- The specification shall have a rapporteur: a delegate from a member company (or, in exceptional cases, a Support Team expert); the delegate should participate 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 (see 4.0A).

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 **authorized 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 **bold** .

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 authorized 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

NOTE: 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 (void)

4.6 Change Request regime

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.

4.6.2 Change Request forms

To ensure an appropriate and consistent way of presenting and documenting Change Requests, there exist 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 (i.e. the original version to which CR is drafted),
- 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.

A CR to a major version of a specification which is not yet frozen can fall into any of the categories quoted below.

Table 4A: Categories of Change Requests

Category	Meaning	Remarks
A	Corresponds to a correction to an earlier Release	May be used only if a category F CR has been approved for an earlier release. "Earlier release" means either an earlier major version of the same 3GPP specification or a major version of the equivalent GSM specification from which the 3GPP specification was created. If a change to an earlier release affects a section which has a counterpart in a later release, then the corresponding category A CR to the later version(s) shall be presented for approval at the same meeting.
B	Addition of feature	The new feature is to be added to the Release; the reference is *not* to the Specification itself. This will normally correspond to an identified work item. This category shall not be used for a frozen Release.
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 a frozen Release.
D	Editorial modification	Editorial modifications shall have no impact on an implementation. An editorial modification CR to a frozen Release shall not be permitted.
E	(not used)	
F	Correction	Used: 1 to correct an error in the specification (i.e. a clear instruction in the specification which leads to incorrect operation of the system); or 2 to correct an ambiguity in the specification which could lead to different implementations which cannot inter-operate; or 3 to add a part of a functionality agreed for the Release found to be missing in the specification; or 4 to remedy the incorrect implementation of a previously approved CR; or 5 to correct a misalignment between the specifications (stage 1, stage 2 & stage 3) for a feature or service. Corrections can lead to functional modification, but these shall be considered as category F.

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/).

As the degree of acceptability for modifications differs between major versions of specifications which are not yet frozen and versions which are already frozen (see subclause 4.7), CRs differ on the allowed/possible categories. A CR to a frozen major version of a specification can only be a correction (category A or category F, defined in table 4A). If it is category F, it shall fit into one of the following classifications.

- Essential correction, i.e. where a frequently occurring (successful or unsuccessful) case is not handled properly because there is some error or significant ambiguity in the specification.
- A CR to remedy the incorrect implementation of a previously approved CR.
- A CR which is supported by consensus in the meeting.

When a CR is presented for approval, the classification into which it falls shall be identified. If this cannot be done then the CR shall be automatically rejected.

The CR form bears a field to indicate the Release number to which the CR pertains. This field shall show the Release of the intended *resulting* specification – that is, the Release of the specification *after* implementation of the CR. The Release shown on the CR form is not related to the Release of the feature to which the change relates, but to the Release of the specification being changed.

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".

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 Group primarily responsible for 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 Group 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 as early a stage as possible to come to a widely acceptable solution. Comments from secondarily responsible TSGs (if any) shall have been sought and comments shall have been taken into account before presentation to the TSG for approval.

To ease the work of the 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 the originator 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 Group.

All CRs shall be presented in electronic form.

CR identification:

During the course of its development, a CR may be modified, and the CR's progress shall be indicated by allocation of a revision number: rev. 1, 2, and so on. A given revision of a CR is uniquely defined by

- the specification to which it belongs, and
- 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).

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

For a given Specification, CR numbers shall be unique and shall never be reused. Numbers used for rejected CRs shall not be reused. 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 content of the CR is such that, in isolation, it makes the whole set of approved Specifications inconsistent, corresponding CRs shall also be considered and produced. This should be carried out by the originator of the CR (and his colleagues in other 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 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 should be combined into a single document, by the Support Team , before submission to all responsible TSGs and called "Joint CRs". An approval by all primarily responsible TSGs is necessary.

If some of the corresponding CRs are to be considered by other Groups, the Support Team shall be responsible for monitoring the result in those Groups and for submitting the full set, when available, to the TSG. This might mean that

in some cases the CRs agreed in the TSG WG are not presented to the immediately following TSG meeting due to outstanding CRs from other Groups.

Other "consequential" CRs, needed for reasons other than direct consistency, may be drafted, presented and agreed independently. This covers typically additions to test specifications and O&M specifications. If 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:

When the TSG WG has agreed to a CR and comments from secondarily responsible TSGs (WGs) have been taken into account, the Support Team shall ensure that it is correctly formatted and assembled, and shall submit the CR to the primarily responsible TSG for formal approval.

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

Decisions on CRs, and results:

The TSG shall consider and conclude on each CR independently, except for Joint CRs, which are handled and concluded together; the verdict on each CR shall be one of the following:

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 Working Group for revision and possible re-submission at a later TSG meeting.
Rejected:	CR not acceptable. Further discussions on the subject, if any, shall take place within the responsible Group.

Control and notification of CR decisions:

At the end of each TSG meeting, the Support Team shall issue 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 shall 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 takes some time before the new versions of the specifications can be compiled and released.

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.

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).

Normally, all specifications of a Release will be frozen when the TSGs decide that the functionality of the Release is stable – i.e that all new features to be included in the Release have been defined and that all new or modified functionality required to implement those features has been incorporated into the specifications. At this point, the Release as a whole shall be declared to be "frozen", and its constituent specifications shall likewise be "frozen". Thereafter, only essential corrections (CR categories A or F – see subclause 4.6.2) shall be permitted.

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 4.0B. 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 4.6) in the usual way, with the version number of the resulting specification indicating the new Release. The CR shall bear the identity of the new Release (rather than the starting point Release – see subclause 4.6.2.

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 clarifying 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 principal CR and its related mirror CRs should be grouped together for the purpose of presentation to the TSG (unless some other grouping is more logical).

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.

See also subclause 4.6.2.

4.10.3 Release mechanisms

It is important that the 3GPP release structure provides a sound basis for implementations and equipment interoperation. Key principles important to ensure this are:

- A Release shall consist of a well-defined, stable and internally consistent set of functions.
- A Release shall be documented in a maintained, consistent stream of specifications.
- Essential corrections to a stable or frozen release shall be included in the applicable Release.
- New or changed functionality shall be included in a new (rather than retrospectively in an old) Release.

These principles will ensure successful interoperability (roaming) amongst different instantiations of 3GPP systems.

4.10.3.1 Corrections to Releases

Each release should be consistent and implementable to ensure interworking. This implies that essential corrections become normative parts of the Release as soon as possible. If essential changes to "old" functionality are made to a new release, similar corresponding changes shall be made to correct the same error in the specifications pertaining to all previous, non-closed, Releases. This is illustrated in figure A.

4.10.3.2 New features

New functionality shall be included in the latest, non-frozen, Release. New functionality shall not be included in previous, frozen, Releases. To do so would cause incompatibility amongst instantiations of those Releases. This is illustrated in figure A.

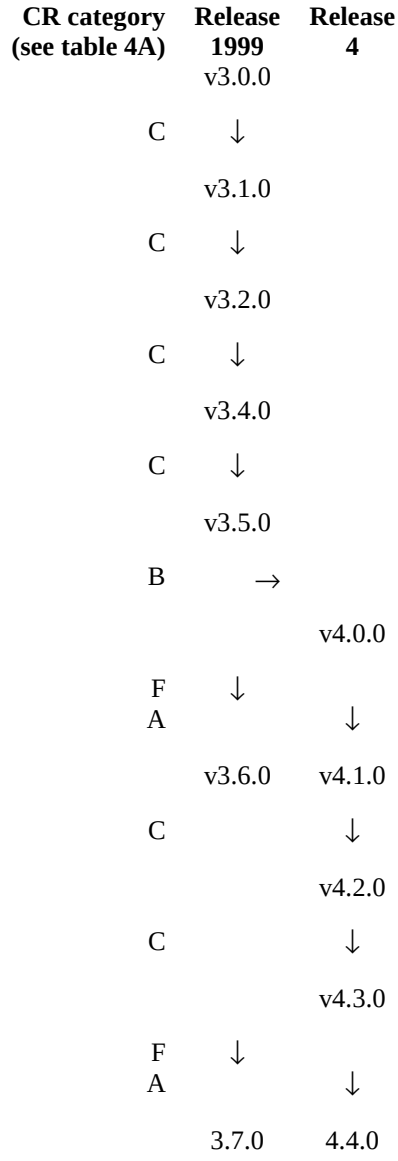

Figure A: Introduction and development of new features to the latest Release; and corrections to multiple Releases (example)

4.10.3.3 Release naming

GSM phase 2+ specifications were grouped into annual Releases from 1996 to 1999. The first 3rd generation specifications were grouped into an initial Release 1999.

Subsequent Releases are not necessarily annual, and shall be referred to as Release 4, Release 5, etc., according to the major field of the version number (see table 4 and subclause 4.3).

4.10.3.4 Introduction of features into Releases

Development of the 3GPP system specifications shall be controlled by means of a work plan covering the inclusion of new features (functionality). Target dates for completion of work items (see clause 6) shall be estimated by the responsible Groups. Milestones may be defined to monitor the progress of work items. Based on the estimated

completion of the desired features, a target date for freezing of the specifications pertaining to the next Release can – and shall – be calculated. Feature development should be based around *approximately* annual Releases.

Thus the work plan shall indicate (a) the estimated freeze date of forthcoming Releases and (b) the functional content of each such Release. The work plan shall show all projected work, regardless of Release; this will ease long term planning and the packaging of features into Releases. Completed work items shall be removed from the plan once the Release of which they form a part has been frozen.

The freezing date for a particular Release should insofar as is possible be adhered to, even if, due to delays, it is not possible to include all the features originally intended. Features which cannot be completed in time should be held over to the next Release. It will normally be the case that test specifications and O&M specifications will not necessarily be completed until some time after the base specifications; this shall not impede the freezing of the Release as a whole. However, if it becomes evident that, due to delays in a number of important features, a new Release would contain little new functionality, it may be preferable to delay the freezing of the Release to allow more of the originally intended features to be included.

The project plan shall clearly show the progress of each work item. When all component work items of a feature have been completed, the TSG shall declare the feature to be frozen. The only further development permitted from that point onwards shall be:

- the essential correction of errors;
- the completion of the test and O&M specifications; and
- unavoidable adjustments required to cater for interworking with other features in the same Release.

See clause 6 for further information on work items.

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 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.

6.0.2 Types of modifications to specifications

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

- Error corrections: modifications which correct overlooked errors or inconsistencies in the specifications.
- Enhancements: 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. 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 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 shall assign prime and, if necessary, secondary responsible TSGs for the corresponding work items.
- For pure performance enhancements, other TSG WGs may be responsible (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 shall be distributed by the Support Team.

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

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

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 affect several specifications and involve several TSG-SGs;
- Pure (technical) enhancements that affect one or small number of specifications and involve a single or a few Groups only.

Modifications of the latter type may be submitted to the TSG Sub-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 provisions of subclause 6.3 apply.

6.3 Start and continuation of the work and responsibilities

6.3.1 General

An early task when elaborating a work item is to identify the tasks related to the WI and to allocate them to the TSGs and TSG Sub-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 another Group may be given responsibility for the service requirements. In any case, however, it should be a single group and one that reports directly to the TSG.

System/Architectural requirements and implications:

In 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 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 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 organization of joint meetings.

TSG SA shall maintain the overall consistency of the system architecture despite the numerous modifications due to various work items. TSG SA, shall ensure 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 Groups.

Protocol specifications:

The responsibility for the elaboration of the protocol specifications cannot, in most cases, 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 shall be derived from the system/architectural requirements. In general, modifications of existing protocols shall be done by the TSG WG in charge of the protocol in question, whilst the responsibility for development of new protocols 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.

6.3.2 Role of the rapporteur

Every Work Item shall have a rapporteur. The rapporteur should be selected from regular attendees of the primary responsible Group and shall be selected from supporting companies. The role of the rapporteur is to:

- Monitor the progress of the work in all WGs for the WI.
- Report to the responsible WG and produce a report to the WG plenary on progress.
- Provide feedback to allow the work plan to be updated.
- Keep the WI sheet up-to-date.
- Identify the completion of the WI.

NOTE: Updates of WI sheets require approval by the responsible WG/TSG.

6.4 Realization of Work Items

6.4.1 Planning and 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 plan shall include realistically achievable dates for each step.

The WI Status List shall also contain information 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 Group, the rapporteur, the state of the documents, expected completion dates, etc.

Categorization:

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 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 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 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.

6.4.2 Choice of deliverables

The WI will be realized as new specifications and/or amendments to existing specifications; the exact structure lies with the individual TSG Sub-Groups and the TSG. Typically, a new feature may result in at least three completely new specifications (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 requirements

This task, allocated and controlled according to the provisions above, 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.

In many cases it is 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 task force is charged with performing a study on a certain WI (aspect) such a starting point document 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 realization specifications.

Such setting-the-basis documents should generally be 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).

6.4.3.2 Technical realization specifications

These cover 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 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 Completion of Work Items

When all necessary modifications for a given Work Item (or group of Work Items) are completed, and all the corresponding new specifications and Change Requests have been approved and released, then the Work Item 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. S1 sets 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.

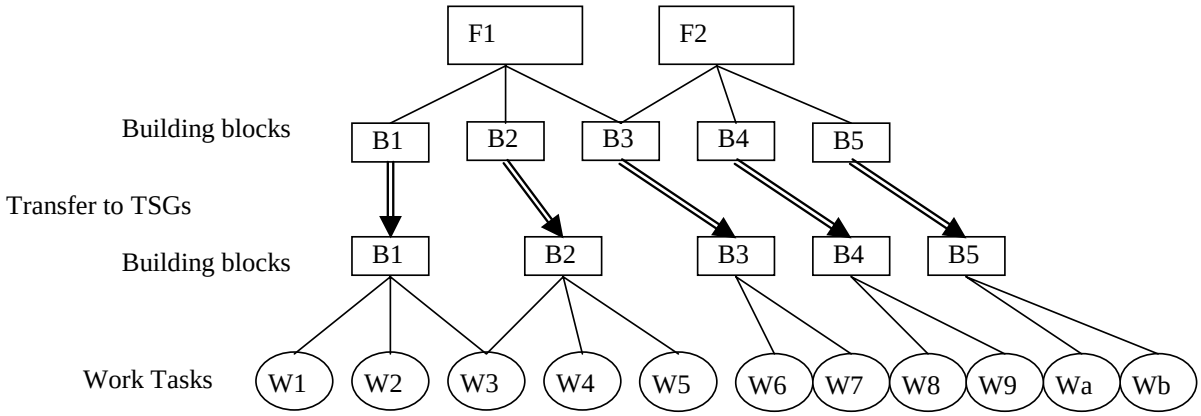

Figure 1

7 Management documents and tools

This clause summarizes 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 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 TSGs.

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 3GPP TR 21.801 are permitted.

7.6 WEB and FTP services

The 3GPP (http://www.3gpp.org) web pages provide up-to-date information on specification work, such as: meeting calendars, meeting minutes, meeting documents and latest specifications. FTP links to file server areas of each TSG and WG can be found via the 3GPP web pages.

7.7 E-mail reflectors

TSGs, WGs and SWGs have their own e-mail lists. There are also several additional lists per topic. Further information can be found on 3GPP web pages.

8 Email decisions

WGs may apply e-mail decision procedures for decisions they are entitled to take, as defined by superior bodies (e.g. on specifications, CRs, Liaison statements, etc.). Each WG may set its rules for making e-mail decisions, however, it is required that:

- the rules are clearly defined and documented;
- a delegate having participated in plenary meetings is able to identify that he has possibly missed an e-mail relevant to e-mail decision.

Clauses 8.1-8.6 describe an e-mail decision procedure example.

8.1 Email drafting phase

An e-mail drafting session can be launched, either on a dedicated exploder list as a cybermeeting or as an informal discussion between interested delegates. Objectives can extend from debating an existing contribution, a Liaison Statement or a Change Request to progressing the service requirements of a specific Work Item and involving one or more Working Groups.

In case of "cybermeeting", the chairman of the discussions shall issue an un-ambiguous guideline including:

1) the objectives and agenda of the meeting;
2) input document(s) to be clearly specified;
3) start date and end date of the debates;
4) afterwards, summary of results of the "cybermeeting".

The end-goal being to reach an “agreement” on the deliverable, either at the next meeting or via an e-mail approval procedure.

8.2 E-mail decision declaration

Authority for an e-mail decision to take place should usually be agreed at plenary meeting. If this is not possible, there shall be a clear notification (i.e. status report) indicating that there will be an e-mail decision. This notification shall be sent on the main mailing lists indicating the mailing list where the discussion will take place (TSG, WG or SWG list). Target and timeframe shall be clearly indicated. A permanent Chairman (i.e. WG chairman or vice chairman) shall be nominated, who will be responsible for managing the e-mail decision procedure, including initiation, monitoring and announcing when it is complete.

8.3 Status reporting

During the e-mail decision period, there shall be a clear message stating what the status of each open item is. It is recommended to have a weekly summary of the status of all items, from the previous plenary listing:

- the name of the open item;
- the name of the responsible delegate;
- time left for comments before the deadline & expiration date;
- current work versions of documents: Tdoc number, CR number, Revision number;
- status (Debate ongoing, Agreed, Postponed, Rejected, ...).

8.4 Decision announcement

When a decision is made (Agreed, rejected, postponed, ...) a clear notification on what has been agreed shall be sent on the main mailing lists of the relevant groups.

8.5 Timing

E-mail decision procedure should start at the latest 3 weeks before relevant plenary:

- the e-mail decision period is two weeks (one status report required);
- the procedure shall be completed one week before the relevant TSG, WG or SWG plenary, due to practical arrangements.

8.6 General

- in exceptional cases when the procedure cannot be followed a clear notice from chairman is required;
- e-mails on mailing lists shall contain a subject with meaningful keywords, e.g. S1 Tdoc xxx on Charging and/or 22xxx-CR012r4;
- if there are no comments during the allowed period, agreement is granted automatically;
- status reports to higher level body meetings, should be e-mailed to the mailing list one week before the meeting. This allows delegates a final possibility to review the progress in the last period.

Annex A:
Change history

Change history					
TSG SA#	Version	CR	Tdoc SA	New Version	Subject/Comment
SP-04	3.0.0	001	SP-99288	3.1.0	Alignment with TSG SA decisions made at TSG#3. Deletion of Strategic/non strategic CR references. Change of PT to Support Team, editorial corrections.
SP-04	3.0.0	002	SP-99289	3.1.0	Harmonisation of the use of software for 3GPP documents in order to minimise the errors due to software conversion problems and to allow efficient interchange of electronic files for electronic working.
SP-05	3.1.0	003	SP-99428	3.2.0	Addition of new text related to electronic working practices.
SP-08	3.2.0	005	SP-000279	3.3.0	Clarification and editorial corrections to provisions covering the management of specifications and work items.
SP-09	3.3.0	007R1	SP-000402	3.4.0	Role of rapporteur for both Specifications and Work Items.
SP-09	3.3.0	008R2	SP-000492	3.4.0	Clarification of CR categories.
SP-09	3.3.0	010	SP-000461	3.4.0	Clarification of CR categories for a frozen 3GPP release.
SP-09	3.3.0	editorial		3.4.0	Change of “Release 2000” into “Release 4”, addition of “Release 5”.
SP-10	3.4.0	011 r1	SP-000693	3.5.0	Release numbers appearing in CR cover sheets
SP-10	3.4.0	012 r1	SP-000693	3.5.0	Clarification of the "freezing" of specifications
SP-10	3.4.0	013 r2	SP-000693	3.5.0	Release mechanisms
SP-11	3.5.0	014r1	SP-010178	3.6.0	Inclusion of GSM spec numbering scheme
SP-11	3.6.0	-	-	4.0.0	Upgrade to Rel-4.
SP-16	4.0.0	-	-	5.0.0	Upgrade to Rel-5.
2002-09-17	5.0.0			5.0.1	Editorial correction to front cover (change title to read Release 5 instead of Release 4)
SP-21	5.0.1	015	SP-030499	6.0.0	Addition of stage 1-2-3 specification structure description
SP-22	6.0.0	019	SP-030575	6.1.0	Corrects references

History

Document history		
V6.1.0	December 2003	Publication