Technical Specification Group Services and System Aspects Meeting #7, Madrid, Spain, 15-17 April 2000

TSGS#7(00) 051

Source: **Chairman, Secretary S1**

Title: **Status Report of SA_WG1 (Services)**

Document for: **Information and Decision**

Agenda Item: **5.1.1**

TSG SA1 STATUS REPORT

1 General Overview of Progress

TSG SA WG1/SMG1 (S1 for short) has held one plenary meeting held in Sophia Antipolis, France from the 9th to 11th February 2000. It was chaired by Mr Alan Cox (Vodafone AirTouch), the secretary was Mr Michael Clayton from the MCC and it was hosted by ETSI.

The meeting was shorter than normal due to an ALL IP workshop held in Nice in the same week. This reduced time meant that not all the work was completed during the meeting but what was left has been dealt with over email. It should be noted that the SA1 email approval procedure requires 100% agreement, which has been achieved in all but three issues (see below).

Out of necessity, the group has been focussing on completing Release 99 together with addressing feedback from other working groups. There was also a review of the work required for Release 2000 to which end SA1 has produced a TR (see below).

2 Summary of Inputs to SA

The list of documents submitted is attached in Annex 3, and the details are summarised here for clarity.

2.1 Specifications/Reports

One report is submitted to SA for **Approval** and one for **Information**.

The report submitted to SA for **Approval** is:-

TR 21.905 version 2.0.0 Release 1999; Vocabulary for 3GPP Specifications

The report is submitted to SA for **information** is:-

TR 22.976 version 1.0.0 Release 2000; Study on release 2000 services and capabilities (see 3.4)

2.2 Change Requests

S1 in this period has generated a number of change requests that reflect a series of

clarifications and corrections, especially to ensure a coherent Release 99.

Change requests to GSM specifications that are also transferred into 3GPP are included, even if they impact earlier releases and in these cases, the CR will be indicated subsequently to SMG plenary for information. Clearly, changes affecting Release 99 in the 22.xxx series are the responsibility of SA, but those relating to 22.0xx will informed to SMG. Any change to an 02.xx specification not transferred to 3GPP is considered out of scope of this SA plenary and will be submitted to SMG for approval.

2.2.1 Principles of Telecommunication Services (22.001)

In the process of transferring GSM specifications to 3GPP, it was decided in SA1 (and ratified by SA#6) not to create a 22.040 on network tones and call progress indicators, but rather put the relevant text into 22.001. This text was originally put in as a normative annex, but subsequently it has been identified that the tones indicated therein are predominantly European.

Therefore, CR 22.001-003 has been elaborated to change the annex to informative and to add the tones used in Japan. More examples from other regions could follow, but need not with the now informative annex. The CR is presented for approval in document 053/00.

2.2.2 Bearer Services Supported by a PLMN (22.002)

SA1 is presenting CR to 22.002-005 on corrections on 3,1 kHz Audio support. It was agreed that 3,1 kHz Audio support for 33.6 kbit/s shall include also SYNC T. The CR is presented in document 054/00.

2.2.3 PLMN selection (22.011)

A liaison statement on Requirements for Network Selection has been received by SA1 from CN1. It states that S1 are introducing four concepts, taking access technology, prioritisation of voice service, operator controlled PLMN selector list and Home Environment Specific Network Selection Procedure into account for PLMN selection. This appears to be against the rules, which were agreed in TSG #6 when R99 was functionally frozen and some of these new features would risk the R99 schedule.

However, it should be noted that most of these requirements actually originally came from another specification 22.101 and had been there for some two years and were, therefore, not new requirements. This notwithstanding, it is clear that the requested features as indicated in a liaison statement can not be completed for R99, although some of the reasoning employed by CN1 are incorrect.

SA1 has examined the requirements and relevant improvements and clarifications have been made. Also it is of the view that Home Environment Specific Network Selection Procedure can be deleted. Therefore, CR 22.011-012 and 22.011-013 are presented in document 055/00 for approval.

It should be noted that with the approval of these CRs, the features will be deleted from R’99 and from R’00. If anyone wants the feature in R’00 then it should be re-introduced.

2.2.4 Man machine Interface (22.030)

At the last meeting of SA1, it was reported that the follow-me service has been implemented in DECT, and it is different to that defined in 22.094. Based on this, the rapporteur has been asked by HF to change the name. However, SA1 want still to

maintain the original name. Therefore the CR 22.030-007, introcuding MMI code for FM, is presented for approval with the original name of follow-me.

Another CR is also provided in document 056/00 which introduces the MMI (Man-Machine interface) of Multicall. The CR 22.030-008 is presented for approval.

2.2.5 HSCSD (22.034)

With the transfer of GSM specifications to 3GPP it was found that 22.034 required an update. Text referring to the GSM system needs to be changed to refer to both the GSM and 3G systems. This work has been done and ratified with CN1. Therefore, CR 22.034-003 is presented in document 057/00 for approval.

2.2.6 SIM Application Toolkit (22.038)

With the transfer of GSM specifications to 3GPP it was found that 22.038 required an editorial update. Text referring to the GSM system needs to be changed to refer to both the GSM and 3G systems. This work has been done and so CR 22.038-001 is presented in document 058/00 for approval.

A liaison statement was received from SMG9 on Addition of requirement for bearer independent data transfer in GSM 22.038 that included a CR to 22.038. This work has been done in SMG9 although the CR was passed to SA1 for ratification.

Of note in this CR is the requirement for a buffer in the mobile station and mobile manufacturers need to be aware of it.

The CR 22.038-002 is presented in document 058/00 for approval.

SA1 also received a liaison statement from SMG9 on a new SIM toolkit feature: "Auto-answer & Mute-ringing". Some concern was expressed in SA1 regarding privacy if the phone was to be rung and answer automatically, giving the caller access to what could be private conversations.

Originally, this was being proposed for R’99 but SMG9 did not allow it. They passed it SA1 for comments since it can be considered for R’00.

The concern of SA1 was that there does not appear to be any specific valid applications for this feature. If T3 can find some specific features, then SA1 will re-consider it. This has been communicated to SMG9 and TSG T3.

2.2.7 GPRS (22.060)

Restructuring of 22.060

At the last SA1 meeting a proposal was received from the editor to make 22.060 more readable. Part of the motivation for the change was to make it simpler to incorporate requirements for R2000 which may arise from the work undertaken in TR22.976.

Whilst ordinarily it is not appropriate to make such a change at this time, there was significant support in SA1 to do this. It was noted that the proposal has been discussed with the stage 2 rapporteur who supported this change, which provides a better alignment between stages 1 and 2.

The chairman of SA1 was given task to clear this change with the SA chairman and MCC.

No adverse comments have been received and so CR 22.060-009 is presented for approval in document 059/00.

Correction

At the last SA plenary a CR was presented to bring 02.60 in line with 3GPP. It was subsequently found that the Point-To-Point Octet Stream Service was inadvertently deleted. Consequently, SA1 is presenting CR 02.60-A025 to correct this in document 059/00.

Support of encryption in GPRS

SA1 has noted that the support of encryption is not included specifically in GPRS. Hence the meeting compiled CRs to 02.07 on Support of encryption in GPRS mobile stations for both R97 and R'98. For R'99 In R'99 02.07 has been absorbed by document 22.101 and so the equivalent changes have, therefore, been included in 22.101. It should be noted that these changes were subsequently provided to SA3 which had expressed the requirements in the first place.

The four CRs are provided in document 060/00.

2.2.8 Number Portability (02.66, 22.066)

The subject of Number Portability came up at the last meeting. The requirements of North America needed to be included, particularly PCS-1900 Service Provider Number Portability which impacts Mobile Number Portability.

Therefore two CRs 02.66-A001 and 22.066-002 have been elaborated. They are provided in document 061/00 for approval.

2.2.9 CAMEL (22.078)

Some substantial discussion has occurred in SA1 regarding a proposal for the need to re-align of 22.078 due to limited scope of CAMEL Phase 3, since N2 had insufficient resources to complete all the items planned. It has subsequently been agreed to make some changes to 22.078 and the agreed changes are provided in CR 22.078-035.

However, one feature has been left in regarding the announcement capabilities of CAMEL. It has been argued that the requirement to play an announcement to an individual call party cannot be fulfilled by Phase 3 as call party handling is required. Therefore it is proposed to delete the corresponding paragraph in section 14.1. A CR was written and forwarded to the SA1 email list for approval, but since 100% agreement is required, and because this was not achieved, this CR is NOT being presented for approval. (It can be found in SA1 document S1-0000158.) However, it may be that if N1 has not carried out the corresponding changes to their specifications, this feature will in any case not be able to be part of Release 99.

In-band user interaction

The subject of in-band user interaction for dialled services in CAMEL ph3 has also been discussed and it has been proposed to clarify the scope of CAMEL phase 3. It is necessary to provide In-band user interaction capability for the dialled service (subscribed and serving network) as the user interaction capability is essential for CAMEL supported services. There is no clear reason to exclude this capability from CAMEL ph3, except for

where service interaction comes from a previously invoked service. This is also mentioned for stage 2/3 specification. In addition, the allowed instruction for the dialled service is too restrictive, so it is also proposed to remove such restriction.

A CR 22.078-033 has been elaborated and it has been provided to CN2 to see if the related issues in CN2 would be solved. It is understood that this is the case and the CR has achieved approval in SA1. Therefore, it is presented in document 062/00 for approval

CR 22.078-032 relates to the Call gapping / congestion control in HPLMN as discussed in the CN2 Kyoto meeting. SA1 has subsequently discussed it and finds it acceptable to have call gapping in the Home network only. This simplifies the implementation. It shall be noted also, that most of the load comes from the HPLMN. The CR is presented for approval in document 062/00.

Finally, the terms GPRS session, GPRS attach/detach and PDP context are used in the GPRS standards in various contexts and ways. The current set of contributions aligns the terminology to the 23.078 terminology, as this one is used most consistently. Therefore, CR 22.078-034 has been elaborated to bring the stage 1 in line. This is presented in document 062/00.

2.2.10 USSD (22.090)

Document 063/00 contains a CR 22.090-002 on the UCS2 character set for MMI mode. During USSD enhancement it has been agreed to allow the same character set for USSD and SMS. The change to Stage 1 has never been incorporated.

It is presented for approval in document 063/00.

2.2.11 UMTS Phase 1 (22.100)

An editorial CR 22.100-023 is being presented to remove reference to SoLSA. It is provided in document 064/00 for approval.

2.2.12 Services & Service capabilities (22.105)

Document 065/00 contains two CRs to 22.105. The first CR to 22.105-022 makes a correction related to FAX support where two pieces of text are transposed.

A similar change is also presented in CR to 22.105-023 which contains a clarification of SoLSA support. Both are being sent to SA#7 for approval (see also 22.100-029).

2.2.13 Charging and billing (22.115)

A number of comments to 22.115 “Charging and Billing Service Aspects” have been received from SA5. These have resulted in a CR 22.115-004 which is being presented for approval in document 066/00.

2.2.14 VHE (22.121)

Two CRs to 22.121 were provided in document 067/00.

The CR 22.121-005 deals with the issue of MExE and SAT servers, an issue which has attracted long discussions.

The proposed change clarifies this issue by:

- introducing a modified figure 3 where the SCFs are presented in a neutral format (excluding a specific mapping to a concrete SCS) and the concrete denomination of the SCS with CSE, HLR, MExE and SAT are replaced in favour of the more general names SC1, .. SCS n. This has the advantage that the figure no more suggests that the implementation of *any* of the SCS is mandatory. On the other hand this change does not limit the way *how* certain SCFs are implemented by SCS, i.e. which network resource they use to provide a certain SCF to the application.

- considering all concrete network entities and their related interfaces (HLR, SAT, MExE,etc.) only as examples in the text by adding "e.g." or by "may be realised".

CR to 22.121-006 contains a change on Message Transfer and Data Download. There have been long discussions around the issue "Message Transfer SCF" and "Data download". Especially, it has been considered as problematic that the sections to be changed imply the possibility to download data *to* the application server. This contradicts the view that the application server establishes only a controlling relationship but not a bearer channel to the Service Capability Servers and the underlying network (via the SCS). The proposed changes try to clarify this point by

- removing the term "message transfer" and replacing it by "information transfer".

- introduction of the appropriate functions

- deleting the section data download completely since it is already covered by the "information transfer"

Both CRs are presented in document 067/00.

Another issue, which was brought up at SA1, is that of the relationship between Service Capability Features and the Terminal Capabilities. In the VHE specification (TS 22.121), one of the Service Capability Features, the Terminal Capabilities Service Capability Feature, is supposed to be used by the service application in order to adapt the service to the terminal currently used by the subscriber.

However, the description of this feature does not clearly state that the set of capabilities of which support by the terminal can be discovered through the use of the Service Capability Feature. For compatibility reasons, it is felt important to standardize a minimum set of Terminal Capabilities which might be discovered through the “Terminal Capabilities Service Capability Feature”.

A proposal has been received to use the IMEI (or equivalent) to identify the capabilities. However, there are some concerns that the IMEI is not sufficient as external equipment may be added after the sale of a mobile and this will not be reflected in the IMEI. Moreover, there could be some privacy issues about storing the capabilities of the UE/ME.

It was decided, although not unanimously, that it is not possible to do anything in release ’99 unless CN2 can put in the requirement for the IMEI to be passed to the CSE. However, there is a requirement to put in terminal capabilities for R’00.

2.2.15 Multicall (22.135)

The Multicall service stage 1 has attracted a great deal of discussion, not least that it is unclear. Therefore, SA1 has spent some time addressing liaison statements from other groups in order to clarify what the requirements are.

CR 22.135-004 is therefore presented to clarify the following points:

- Scope
- Relation between number of bearers and number of calls
- NDUB definition
- Interaction with other services
- Compatibility with future releases

The changes prepared by CN SS ad hoc, are quite substantial. S1 agreed the CR on email approval. Also CN1 are aware of this CR.

In addition CR 22.004-003 is being introduced to align with the decisions from CR 22.135-004 above. Both CRs are presented in document 068/00

(See also CR 22.030-008 to introduce the MMI for Multicall in document 056/00)

2.2.16 Editorial CRs

Stemming from a comment at the last SA plenary by the chairman of T2 (and SMG4) that the term SMS-CB is no longer used, two editorial CRs have been elaborated.

CR 22.001-002 and 22.003-002 have been elaborated to change the text “SMS-CB” to “CBS”. These are presented in document 069/00 for approval.

2.2.17 FDN

For two meetings a dialogue has been ongoing between T3 and SA1 regarding the implementation of Fixed Dialling Number (FDN). Resulting from this, SA1 has elaborated a CR 22.101-031 to allay the concerns of T3. This is provided for approval in document 070/00.

2.3 Outstanding Issues

2.3.1 Emergency Calls

Emergency Calls using IMEI

A dialogue has been ongoing between CN2 and SA1 regarding the use of IMEI as a UE identifier for emergency callback. The point is that it is not possible to use the IMEI to call back the mobile if the emergency call is made without the SIM. Indeed, because of this some countries do not allow for SIM-less emergency calls.

SA1 is of the opinion that the status-quo should be maintained; i.e. that emergency calls without the SIM is not possible.

Emergency Call routing

Another issue regarding emergency calls is that of emergency calls to multiple emergency

service numbers. The key is to provide different routing to different emergency centres depending on the emergency. The original proposal (currently within 22.101) is based on addition of Called party BCD Number in the Emergency setup message.

Two proposals are being put forward:

1. To add Called party BCD Number in the Emergency setup message; or,

2. To add a field associated with the emergency numbers stored on the SIM that (alone) is passed to the Network if the dialled digits correspond with the number stored.

S1 did agree on principle to change the functionality, based on N1 comments, to use type of emergency call (e.g. Police, ambulance, etc…). However the final wording was left to email approval. The completion of the feature required actions from N1 and T3, which could not be completed due to late change of requirements. Thus the CR has been withdrawn and it's been agreed that routing of emergency calls shall be done like in R98. The relevant CR will be produced at next S1 plenary.

2.3.2 Access Control Classes

A proposal has been received from T3 to allow different Access Control Classes for GSM and 3rd Generation networks. The EF_{ACC} file contains the assigned access control class parameter which is used to control the RACH utilisation in emergency situations. The 15 classes are split into 10 classes randomly allocated to normal subscribers, and 5 classes allocated to specific high priority users. (Class 10 is not assigned in SIMs, but is used for emergency calls.)

From a technical point of view, it is possible for the USIM to store two separate Access Control Classes, one for each network technology, so that the operator can assign different access control classes, which depend on the network technology.

The discussion is ongoing.

3 Release 2000

Ordinarily, a change request for Release 2000 would not be expected. However, in its last meeting SA1 discussed a number of issues which have been put into R'00. These are described below.

However, they beg the question on how the R'00 specification set will be formulated. The discussion is ongoing in MCC. If, however, the following CRs are approved, some guidance on the formulation of R'00 specifications may be required.

3.1 Wideband AMR

At the last meeting of SA1, and subsequently, the inclusion of Wideband AMR has been discussed albeit by email.

A CR to 22.003-003 has been elaborated and is provided in document 071/00 to add the requirement of Wideband AMR.

3.2 Network selection (22.011)

Document 071/00 contains a proposed CR 22.011-014 on PLMN Selection while roaming. This is in response to a GSM Association SCAG liaison statement forwarded from SMG9.

It is presented for approval if appropriate at this time in document 071/00.

3.3 Push services for GPRS (22.060)

The discussion on Push Services for was prompted by a Liaison from SA2. In order to be able to have mobile terminated GPRS calls, the address of the UE needs to be identified. Also, there is a requirement that even if the user is inactive, we will want to deliver 'push' services.

The resulting CR 22-060-014 is presented in document 071/00.

3.4 Release 2000 TR (22.976)

SA1 has been working for some time now on TR 22.976 (Study on R00 services and capabilities). The report has been provided to SA#6 for information and, interestingly, even at that time was very much in line with the ALL IP workshop held in Nice subsequent to SA#6.

SA1 has worked on it since to bring out some key aspects of the out from the R00 ad hoc. S1 plan to work on this TR at its next meeting, with a view to bringing it to the next SA plenary for approval. The TR should identify what impact R00 and specifically IP multimedia services might have on the specifications of S1 so that appropriate change requests may then be prepared. Since this TR is intended to set the scene for whole R00 architecture, early comments from SA would be welcome.

The focus of the TR is:

- Support and evolution of 3GPP Release 99
- High level vision of multimedia services
  - Examination of potential service drivers
- New and evolved service capabilities and end user benefits
- Case study of realisation of some services (e.g. CFU)
- Evaluation of what does and does not need to be standardised
- Release a roadmap of time of delivery expectations for standards and products
- Release a Feature List of global interest and potential service candidates
- Division of responsibility between S1 and S2, dialogue between the two groups is required. There is a need to set expectations.

The TR already includes rather stable chapters on:

- Definitions (most covered, some pending on S2 decisions)
- High level vision
  - IP vision
  - Evolution
  - User perspective
  - High level requirements
- R00 services
- Applicability of existing toolkits
- Service capabilities to support services

More work is needed at following areas:

- Definitions of: All IP network, PS Domain, CS domain, GPRS
- Roaming and Handover requirements
- Subscription requirements
- Case studies on service implementation
  - Level of home network control of services (versus VPLMN)
  - "Mandatory" service capabilities
- Summary of required changes to S1 Specs
- Prioritisation of services (PS Domain R00 Feature list)

TR 22.976 is presented in document 073/00 for information.

4 Outlook for future meetings

Although it is anticipated that the great majority of work for Release 99 is now stable, there is a likely continuation of further CRs for clarification/correction or to reflect certain aspects that prove too difficult for other groups to complete during the time available. These may therefore be either simplified or delayed until Release 2000. No new requirements are anticipated for Release 99.

5 Planned meetings of S1

S1#8	10 – 14 April 2000	Beijing, China	Hosted by Nokia
S1#9	17 – 21 July 2000	Taastrup, Denmark	TeleDanmark
S1#10	13 – 17 November 2000	USA	US Members

The chairman would like to express particular thanks to Tommi Kokkola (vice-chairman) and the secretary, Michael Clayton, in preparing the information for this report.

Alan Cox

Annex 1 Documents provided to this Plenary

Tdoc	Title	Agenda
SP-000051	Status report from SA WG1 to SA#7	5.1.1
SP-000052	Slide presentation of SA WG1 status report	5.1.1
SP-000053	CR to 22.001 on procedure for call progress indications	5.1.3
SP-000054	CR to 22.002 on corrections on 3.1kHz audio support	5.1.3
SP-000055	CRs to 22.011	5.1.3
SP-000056	CRs to 22.030	5.1.3
SP-000057	CR to 22.034 on HSCSD changes for 3GPP	5.1.3
SP-000058	CRs to 22.038	5.1.3
SP-000059	CRs to 22.060 and GSM 02.60	5.1.3
SP-000060	CRs to 02.07, 22.101 and 22.060 on support of encryption in GPRS MS	5.1.3
SP-000061	CRs to 02.66 and 22.066 on Service provider number portability	5.1.3
SP-000062	CRs to 22.078	5.1.3
SP-000063	CR to 22.090 on UCS2 character set	5.1.3
SP-000064	CR to 22.100 on SoISA applicability	5.1.3
SP-000065	CRs to 22.105	5.1.3
SP-000066	CR to 22.115 on clarifications on Charging and Billing	5.1.3
SP-000067	CRs to 22.121	5.1.3
SP-000068	CRs to 22.135 and 22.004 on MultiCall	5.1.3
SP-000069	CRs to 22.001 and 22.003 on editorial modifications regarding SMS CB to CBS	5.1.3
SP-000070	CRs to 22.101	5.1.3
SP-000071	CRs to 22.003, 22.011 and 22.060 on Release 2000	5.1.3
SP-000072	TR 21.905 : Vocabulary	5.1.3
SP-000073	TR 22.976 : Release 2000 service requirements	5.1.3
SP-000074	Standardization of an All-IP Network	

Annex 2 CRs provided to this Plenary

Doc-1st-	Status-1st-	Spec	CR	Re	Phas	Subject	Cat	Versio	Versio
SP-000053		22.001	003		R99	Procedure for call progress indications	C	3.1.1	3.2.0
SP-000054		22.002	005		R99	Corrections on 3,1 kHz Audio support	F	3.2.0	3.3.0
SP-000055		22.011	013		R99	Removal of "Home Environment Specific Network Selection Procedure"	C	3.1.0	3.2.0
SP-000055		22.011	012		R99	Corrections to 22.011	F	3.1.0	3.2.0
SP-000056		22.030	007		R99	Introduction of Service Code 214 for “Follow Me”	B	3.2.0	3.3.0
SP-000056		22.030	008		R99	MMI(Man-Machine interface) of Multicall	B	3.2.0	3.3.0
SP-000057		22.034	003		R99	CR on HSCSD changes for 3GPP	C	3.1.0	3.2.0
SP-000058		22.038	001		R99	USIM/SIM Application Toolkit, Service Description, Stage 1	D	3.0.0	3.1.0
SP-000058		22.038	002		R99	Addition requirements for bearer independent data transfer	B	3.0.0	3.1.0
SP-000059		02.60	A025		R98	Corrections on Point-To-Point Octet Stream Service	F	7.2.0	7.3.0
SP-000059		22.060	009		R99	Restructuring to improve clarity and align with Stage 2	F	3.2.0	3.3.0
SP-000060		02.07	A026		R97	Support of encryption in GPRS mobile stations	A	6.1.0	6.2.0
SP-000060		02.07	A027		R98	Support of encryption in GPRS mobile stations	A	7.1.0	7.2.0
SP-000060		22.060	010		R99	Support of encryption in GPRS mobile stations	F	3.2.0	3.3.0
SP-000060		22.101	030		R99	Support of encryption in GPRS mobile stations	A	3.8.0	3.9.0
SP-000061		02.66	A001		R98	PCS-1900 Service Provider Number Portability impacts for	A	7.0.1	7.1.0
SP-000061		22.066	002		R99	PCS-1900 Service Provider Number Portability impacts for	A	3.0.1	3.2.0
SP-000062		22.078	032	1	R99	Call gapping / congestion control in HPLMN only	F	3.2.0	3.3.0
SP-000062		22.078	033		R99	In-band user interaction for dialled services in CAMEL ph3	F	3.2.0	3.3.0
SP-000062		22.078	035		R99	Reduced scope of CAMEL Phase 3 in release 99	F	3.2.0	3.3.0
SP-000062		22.078	034		R99	Correction of GPRS session description	F	3.2.0	3.3.0
SP-000063		22.090	002		R99	UCS2 character set for MMI mode	C	3.0.1	3.1.0
SP-000064		22.100	029		R99	SoLSA not applicable for UMTS release 99	F	3.5.0	3.6.0
SP-000065		22.105	022		R99	Correction related to FAX support	F	3.7.0	3.8.0
SP-000065		22.105	023		R99	Clarification of SoLSA support	C	3.7.0	3.8.0
SP-000066		22.115	004		R99	Clarifications to 22.115	D	3.1.0	3.2.0
SP-000067		22.121	005		R99	Clarification of service capabilities	F	3.1.0	3.2.0
SP-000067		22.121	006		R99	Information Transfer service capability feature	C	3.1.0	3.2.0
SP-000068		22.004	003		R99	Introduction of Multicall as Supplementary Service	F	3.1.0	3.2.0
SP-000068		22.135	004		R99	Clarification of requirement for Multicall	F	3.1.0	3.2.0
SP-000069		22.001	002		R99	Editorial modification for change of SMS-CB to CBS	D	3.1.1	3.2.0

SP-000069		22.003	002		R99	Editorial modification for change of SMS-CB to CBS and to	D	3.1.0	3.2.0
SP-000070		22.101	031		R99	Fixed Dialing Number (FDN)	F	3.8.0	3.9.0
SP-000071		22.003	003		R00	Addition of Wideband AMR	B		
SP-000071		22.011	014		R00	Network Selection	B		
SP-000071		22.060	011		R00	The support of Push Services for GPRS	B		

Annex 3 TSs and TRs under SA1 responsibility

Type	Number	Title	current_ version	Planned / achieved	WG	editor
TR	21.905	3G Vocabulary	1.0.0	Dec 99	S1	Michele Zarri
TS	22.001	Principles of Telecommunication Services Supported by a GSM Public Land Mobile Network(PLMN)	3.1.1		S1	
TS	22.002	Bearer Services Supported by a GSM PLMN	3.2.0	Oct 99	S1	Paul Carpenter
TS	22.003	Teleservices Supported by a GSM Public Land Mobile Network (PLMN)	3.1.0		S1	**Tommi Kokkola**
TS	22.004	General on Supplementary Services	3.1.0	Oct 99	S1	Paul Carpenter
TS	22.011	Service accessibility	3.1.0	Oct 99	S1	Jean-Paul Gallaire
TS	22.016	International Mobile Equipment Identities (IMEI)	3.1.0	Oct 99	S1	Tommi Kokkola
TS	22.024	Description of Charge Advice Information (CAI)	3.0.1	Oct 99	S1	Paul Dwyer
TS	22.030	Man-Machine Interface (MMI) of the Mobile Station (MS)	3.2.0	Oct 99	S1	Tommi Kokkola
TS	22.034	High Speed Circuit Switched Data (HSCSD) - Stage 1	3.1.0	Oct 99	S1	Tommi Kokkola
TS	22.038	SIM application toolkit (SAT); Stage 1	3.0.0	Oct 99	S1	Bill Robinson
TS	22.041	Operator Determined Call Barring	3.1.0	Oct 99	S1	Paul Dwyer
TS	22.042	Network Identity and Time Zone (NITZ), stage 1	3.1.0	Oct 99	S1	Mikael Dahlkvist
TS	22.043	Support of Localised Service Area (SoLSA) - Stage 1	3.0.1	Oct 99	S1	Tommi Kokkola
TS	22.057	Mobile Station Application Execution Environment (MExE); Stage 1	3.0.1	Oct 99	S1	Mark Cataldo
TS	22.060	General Packet Radio Service (GPRS); Stage 1	3.2.0	Oct 99	S1	Paul Carpenter
TS	22.066	Support of Mobile Number Portability (MNP); Stage 1	3.0.1	Oct 99	S1	
TS	22.067	enhanced Multi-Level Precedence and Pre-emption service (eMLPP) - Stage 1	3.0.1	Oct 99	S1	Joerg Swetina
TS	22.071	Location Services (LCS); Stage 1 (T1P1)	3.2.0	Oct 99	S1	Randolph Wholert
TS	22.072	Call Deflection (CD); Stage 1	3.0.1	Oct 99	S1	Horst Rauch
TS	22.078	CAMEL; Stage 1	3.2.0	Oct 99	S1	Michel Grech
TS	22.079	Support of Optimal Routing; Stage 1	3.0.1	Oct 99	S1	
TS	22.081	Line Identification Supplementary Services; Stage 1	3.1.0	Oct 99	S1	Thomas Ahnberg
TS	22.082	Call Forwarding (CF) Supplementary Services; Stage 1	3.0.1	Oct 99	S1	Jean Paul Gallaire
TS	22.083	Call Waiting (CW) and Call Hold (HOLD) Supplementary Services; Stage 1	3.0.1	Oct 99	S1	
TS	22.084	MultiParty (MPTY) Supplementary Service; Stage 1	3.0.1	Oct 99	S1	
TS	22.085	Closed User Group (CUG) Supplementary Services; Stage 1	3.1.0	Oct 99	S1	
TS	22.086	Advice of Charge (AoC) Supplementary Services; Stage 1	3.1.0	Oct 99	S1	Paul Dwyer
TS	22.087	User-to-user signalling (UUS); Stage 1	3.0.1	Oct 99	S1	Christian Braden
TS	22.088	Call Barring (CB) Supplementary Services; Stage 1	3.0.1	Oct 99	S1	
TS	22.090	Unstructured Supplementary Service Data (USSD); Stage 1	3.0.1	Oct 99	S1	Tommi Kokkola
TS	22.091	Explicit Call Transfer (ECT) Supplementary Service; Stage 1	3.0.1	Oct 99	S1	
TS	22.093	Call Completion to Busy Subscriber (CCBS); Stage 1	3.0.1	Oct 99	S1	
TS	22.094	Follow Me Stage 1	3.1.0	Dec 99	S1	
TS	22.096	Calling Name Presentation (CNAP); Stage 1 (T1P1)	3.0.1	Oct 99	S1	
TS	22.097	Multiple Subscriber Profile (MSP); Stage 1	3.1.0	Oct 99	S1	Paul Dwyer
TS	22.100	UMTS Phase 1	3.5.0	April 99	S1	Jean-Paul Gallaire
TS	22.101	UMTS Service principles	3.8.0	April 99	S1	Paul Dwyer
TS	22.105	Services & Service capabilities	3.7.0	April 99	S1	Wayne Ashwell
TS	22.115	Service Aspects Charging and billing	3.2.0	April 99	S1	Emanuele Montegrosso
TS	22.121	Provision of Services in UMTS - The Virtual Home Environment	3.1.0	June 99	S1	Jumoke Ogunbekum

TS	22.129	Handover Requirements between UMTS and GSM or other Radio Systems	3.2.0	April 99	S1	David Cooper
TS	22.135	Multicall Stage1	3.1.0	Dec 99	S1	Tommi Kokkola
TS	22.140	Multimedia Messaging Service Stage 1	3.0.0	Dec 99	S1	Gunnar Schmidt
TR	22.907	Terminal concepts	3.1.3	April 99	S1	Mika Tolvanen
TR	22.960	Mobile multimedia services	3.0.1	April 99	S1	Thomas Ahnberg
TR	22.971	Automatic establishment of roaming relationships	3.1.1	April 99	S1	Emanuele Montegrosso
TR	22.972	Multimedia	0.0.0	Dec 99	S1	
TR	22.975	Advanced addressing	3.1.0	April 99	S1	Stephan Kleier
TR	23.927	VHE, Open Service Architecture	0.1.0	Dec 99	S1	