Technical Specification Group Services and System Aspects Meeting #17, Biarritz, France, 9 - 12 September 2002

TSGS#17(02)0431

Source:	**TSG-SA WG4 Chairman**
Title:	**TSG-SA WG4 Status Report at TSG-SA#17**
Document for:	**Information**
Agenda Item:	**7.4.1**

Executive Summary

Since TSG-SA#16, TSG-SA WG4 (SA4) has held one SA4 plenary meeting (SA4#22 on July 22nd – 26th, 2002).

Release 5:

The remaining Rel-5 issues are finalisation of three non-critical TRs (26.976, 26.937, 26.xyz) and completion of recommendation for QoS parameter values for conversational PS applications (completion of informative annex in TS 26.236).

- **Wideband Telephony Service – AMR**: TR 26.976 "Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec" v1.0.0 is presented for information. Also, SA4 proposes the number of allowed AMR-WB codec configurations in active codec sets in speech telephony service to be restricted into three in order to improve TFO/TrFO interoperability and to simplify signalling and testing. A LS is presented asking TSG-SA approval for this restriction. Also related CRs are presented.
- **Extended Transparent End-to-End Packet Switched Streaming Service:** The only remaining work is the preparation of TR 26.937 "RTP Usage Model". This work is ongoing.
- **Multimedia Codecs and Protocols for Conversational Packet Switched Services (part of feature Provisioning of IP Based Multimedia Services):** The lack of progress for TR 26.xyz "Performance characterization of default codecs for PS conversational multimedia applications" was reported at TSG-SA#16. In the review of the work plan, it was then concluded that interested companies are encouraged to start the TR work or otherwise the TR is to be deleted at TSG-SA#17. Since the characterisation work is considered important in SA4 and more effort and time is clearly needed for the work (e.g., to design tests and to develop appropriate test methodologies), SA4 proposes to move the work (and the TR) to Rel-6 under own WID. Consequently, a revised Rel-5 WID and a new Rel-6 WID are presented for approval at TSG-SA#17. In the new WID, also the need for funding of subjective testing is raised. On mapping of SDP parameters to UMTS bearer QoS parameters, SA4 has now finalised recommended tables for PS streaming applications. The work for PS conversational applications will be completed later.

Release 6:

- **Discussion of streaming work for Rel-6** is ongoing jointly with relevant WGs (SA1, SA2, SA3, SA5, T2). Based on the discussion so far, SA4 has prepared an initial draft WID and sent it for review to the other WGs. The SA4 work would be on updating the 26-series Streaming specifications 26.233 "General description" and 26.234 "Codecs and formats" and on related issues, with WI leadership in SA4. The work would be linked to many related WIs and work in other WGs (IMS, MMS, End-to-end QoS, MBMS, GUP, DRM, charging), with SA1 and SA2 having specific responsibility for Stage 1 and Stage 2, respectively. The content of the work is currently under discussion between the relevant WGs and a finalised WID could be expected for approval at TSG-SA#18.
- **A new WID on "Performance characterization of default codecs for PS conversational multimedia applications"** is presented for approval. The target is to carry out the performance characterisation for Rel-6.

Maintenance of releases:

- CRs are presented for the following TSs: 26.093 (R99, Rel-4, Rel-5), 26.103 (Rel-5), 26.131 (R99, Rel-4, Rel-5), 26.132 (R99, Rel-4, Rel-5), 26.202 (Rel-5), 26.234 (Rel-5) and 28.062 (Rel-5).

Note: *Annex B (in separate zipped file) contains slides presentation of the report.*

1. General issues

1.1 Officials

The TSG-SA WG4 (SA4) officials have remained unchanged:

Chairman:	Kari Järvinen	(Nokia / ETSI)
Vice Chairman:	Tomoyuki Ohya	(NTT DoCoMo / ARIB)
Secretary:	Paolo Usai	(3GPP Support)

SWG Chairmen:

SQ (Speech Quality):	Paolo Usai (ETSI)
TFO (Tandem Free Operation):	Clemens Suerbaum (Siemens / ETSI)
PSM (Packet Switched Multimedia):	Rolf Hakenberg (Panasonic / ETSI)

The two year period of the SA4 Chairman expired at SA4#22. Kari Järvinen was nominated (as the only candidate) for a second 2 year period.

1.2 Meetings

Since TSG-SA#16, SA4 has held one plenary meeting.

Meetings held:

SA4#22:	July 22-26, 2002	Host: Nokia, Venue: Tampere, Finland

Calendar of future meetings:

SA4#23:	Sept 30 - Oct 4, 2002	Host: VoiceAge, Venue: Montreal, Canada
SA4#24:	Nov 11-15, 2002	Host: Microsoft, Venue: tbd
SA4#25:	Jan 20-24, 2003	Host: AT&T Wireless Services, Venue: San Francisco, USA
SA4#25bis:	Feb 24 – 28, 2003	Host: tbd, Venue: tbd
SA4#26:	May 05 – 09, 2003	Host: tbd, Venue: tbd
SA4#27:	July 07 – 11, 2003	Host: tbd, Venue: tbd
SA4#28:	Sept 01 – 05, 2003	Host: tbd, Venue: tbd
SA4#29:	Nov 24 – 28, 2003	Host: tbd, Venue; tbd

During the SA4#22 meeting, the PSM, SQ and TFO SWGs met. About 50 delegates participated in the meeting and around 130 documents were covered. The meeting received 8 incoming LSs and 8 outgoing LSs were prepared.

Annex A of this document contains a list of all SA4 input documents to TSG-SA#17. The input documents from SA4 are contained in Tdoc SP-020422 and in Tdocs SP-020431 until SP-020439. Annex B (in a separate file) of this document contains a copy of the slides presentation of SA4 progress report at TSG-SA#17. Annex C contains an initial draft WID on Rel-6 streaming. The draft WID is currently under review and discussion in the relevant WGs and is expected to be finalised by TSG-SA#18.

2. The remaining Release 5 Work

2.1. Overview

The remaining SA4 Rel-5 issues are finalisation of three non-critical TRs (26.976, 26.937, 26.xyz) and completion of recommendation for QoS parameter values for conversational PS applications (to informative annex in TS 26.236).

The remaining TRs are:

- TR 26.976 ” Performance Characterisation of the AMR-WB Speech Codec”
- TR 26.937 “RTP usage model”
- TR 26.xyz “Performance characterization of default codecs for PS conversational multimedia applications”

Version 1.0.0 of TR 26.976 is presented for information at TSG-SA#17. For the other TRs, progress has been slower. However, as informative characterisation TRs the finalisation date is not critical. (Performance Characterisation TRs are always completed after approval of the corresponding TSs, as they characterise the algorithms in the TSs.) The work for TR 26.xyx has not yet been started and the TR is proposed to be moved to Rel-6 under own new WID (in line with the review of the 3GPP Work Plan at TSG-SA#16).

Recommendation for QoS parameter values for PS streaming applications has now been completed (CR to TS 26.234 is brought for approval). More work is needed for completion of recommendation for QoS parameter values for conversational PS applications. (Preliminary mapping table exists already in TS 26.236.)

2.2 Wideband Telephony Service – AMR

2.2.1 TR on Performance Characterisation

The only remaining AMR-WB work is the finalisation of TR 26.976 "Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec". Version 1.0.0 of the TR is brought for information in Tdoc SP-020432. Draft versions 0.3.0 and 0.6.0 of the TR have been presented for information to TSG-SA earlier. These versions already contained results from the 3GPP AMR-WB characterisation tests.

In the TR v.1.0.0, all verification test results have now been included, confidence intervals have been marked in the figures of characterisation test results, additional test results from ITU-T G.722.2 characterisation tests have been included in collaboration with ITU-T (preliminary version still subject to ITU-T SG16 approval in October 2002), the reduction of modes for speech telephony service (from 9 to 5) has been taken into account, and editorial improvements have been made throughout the TR.

A planned experiment on PS conversational and streaming applications has been earlier agreed by SA4 not to be included in the TR. Instead, a new Rel-6 WID is now proposed to evaluate extensively the performance of default codecs (including the AMR-WB) in Packet Switched conversational applications (see Section 2.4 for details). Testing of AMR-WB in EDGE 8-PSK channels will not be carried out by means of internationally co-ordinated testing houses, but instead results made available in GERAN (contributions by individual Companies) will be included later in the TR.

Table 1: Status list of AMR-WB codec specifications under SA4 responsibility

Deliverable	Title	Latest version	Comment/Status	Approval
TS 26.171	AMR Wideband Speech Codec; General description	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010082.	Approved at TSG-SA#11*
TS 26.173	AMR Wideband Speech Codec; C-source code	5.4.0	Approved at TSG-SA#11 in Tdoc SP-010083.	Approved at TSG-SA#11 *
TS 26.174	AMR-WB speech codec; test sequences	5.3.0	Approved at TSG-SA#11 in Tdoc SP-010084.	Approved at TSG-SA#11 *
TS 26.190	AMR Wideband Speech Codec; Transcoding Functions	5.1.0	Approved at TSG-SA#11 in Tdoc SP-010085.	Approved at TSG-SA#11 *
TS 26.191	AMR Wideband Speech Codec; Error concealment of erroneous or lost frames	5.1.0	Approved at TSG-SA#11 in Tdoc SP-010086.	Approved at TSG-SA#11 *
TS 26.192	AMR Wideband Speech Codec; CN for AMR Speech Traffic Channels	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010087.	Approved at TSG-SA#11 *
TS 26.193	AMR Wideband Speech Codec; Source Controlled Rate operation	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010088.	Approved at TSG-SA#11 *
TS 26.194	AMR Wideband Speech Codec; VAD for AMR Speech Traffic Channels	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010089.	Approved at TSG-SA#11 *
TS 26.201	AMR Wideband Speech Codec; Speech Codec Frame Structure	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010090.	Approved at TSG-SA#11 *
TS 26.202	AMR-WB speech codec; interface to Iu and Uu	5.0.0	Approved at TSG-SA#11 in Tdoc SP-010091.	Approved at TSG-SA#11 *
TS 26.204	Floating-Point ANSI-C Code for the AMR-WB Speech Codec	5.0.0	Approved at TSG-SA#15 in Tdoc SP-020073.	Approved at TSG-SA#15
TR 26.976	Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec	1.0.0	Phase 1A carried out by TSG-SA#12. Draft TR v.0.3.0 presented for information at TSG-SA#12 in Tdoc SP-010302. Phase 1B is completed by TSG-SA#14 and updated draft TR v.0.6.0 was presented for information in Tdoc SP-010692. Verification test results for AMR-WB floating-point codec included in SA4 internal working draft v.0.7.0 at SA4#21. Version 1.0.0 presented for information at TSG-SA#17 in Tdoc Tdoc SP-020432.	Target for approval is TSG-SA#18

*) Approved for Rel-5 at TSG-SA#11. (At TSG-SA#11, it was also decided that the AMR-WB Codec WI is functionally frozen and only corrections would be allowed to these specifications).

2.2.2 Proposed reduction of AMR-WB mode configurations for speech telephony service

The reduction of the number of AMR-WB modes for speech telephony service was agreed to at TSG-SA#15 as proposed by SA4 (in LS in Tdoc SP-020009). The reduced set consists of 5 modes (23.85, 15.85, 12.65, 8.85 and 6.60 kbit/s) with the following requirements: For terminals, the three lowest modes shall be supported in all Radio Access Technologies (GERAN-GMSK TCH/F, GERAN-8PSK TCH/F and TCH/H, UTRAN), and, additionally, the the two highest modes shall be supported in GERAN-8PSK TCH/F and UTRAN. For networks, the three lowest modes shall be supported. At TSG-SA#15, SA4 was tasked to make the necessary changes to SA4 specifications. (Also, other TSGs/WGs were asked to take the impact into account.)

As indicated at TSG-SA#15 (in the LS from SA4 proposing the reduction of number of modes) and further explained at TSG-SA#16 (in SA4 progress report in Tdoc SP-020221), SA4 has discussed further restrictions for the allowed AMR-WB mode configurations within active codec sets (ACS), i.e., what modes can be configured to be used within the mode adaptation at the same time. (ACS can contain up to four codec modes, and it is configured at a call setup and may be reconfigured during the call.) At SA4#22, the issue of limiting allowed ACS configurations was discussed further. In order to improve TFO/TrFO interoperability and to simplify signalling (e.g., in call set-up and handovers) and also simplify testing, SA4 proposes (LS in Tdoc SP-020422) that the number of allowed codec configurations for speech telephony service would be restricted into the following three configurations:

Configuration A: 6.60 / 8.85 / 12.65 kbit/s

Configuration B: 6.60 / 8.85 / 12.65 / 15.85 kbit/s

Configuration C: 6.60 / 8.85 / 12.65 / 23.85 kbit/s

These configurations are always TFO/TrFO compatible as they all contain several (three) common modes enabling immediate TFO/TrFO establishment. This would greatly simplify the establishment of TFO/TrFO operation and minimise the need for bearer modifications. (AMR-WB requires transparent channel between MSs, and therefore to simplify TFO/TrFO establishment is especially important for AMR-WB.)

A fourth configuration D (8.85 / 12.65 / 15.85 / 23.85) was considered earlier in SA4 as one more possible configuration. (Information of the discussion on the restricted set of four configurations was sent from SA4#21 to RAN2 and GERAN.) Configuration D was finally omitted since it is not well compatible to the other three ones (as mode 6.60 kbit/s is missing). During the discussion in SA4#22, one company (Siemens) supported an alternative set of 3 configurations but did not formally object the SA4 agreement on the above mentioned three configurations.

In Tdoc SP-020422, SA4 asks TSG-SA to approve the above proposal of reducing the configurations within ACS into three. If approved, SA4 asks (in the LS sent also to the other TSGs) all TSGs to take actions to incorporate the necessary changes (if any) into the TSs under their responsibility.

SA4 already took actions and prepared the necessary CRs for relevant TSs under SA4 responsibility (TSs 26.103, 26.202 and 28.062). These are contained in Tdoc SP-020437 (presented for approval conditionally to the TSG-SA approval of the content of the LS). This CR Tdoc contains both related issues: the reduction of codec modes for speech telephony service from 9 to 5 as agreed at TSG-SA#15 (and as described in the LS from SA4 in Tdoc SP-020009), and the further limitation of codec configurations into three as proposed at TSG-SA#17 (in the LS in Tdoc SP-020422). As these two issues are very related, they are best treated in the same CRs.

In the CR Tdoc SP-020437, normative requirements for the number of modes and the further limitation of configurations are proposed to be put into TS 26.103 (Codec Lists). (It already contains normative requirements for the support of UMTS_AMR and UMTS_AMR2 codec types.) Table 2 summarises the requirements (from Tdoc SP-020009) in terms of the three configurations A, B and C.

Table 2: Illustrative table of the requirements for support of modes in terms of configurations

Speech telephony service channel	Terminal shall support	Network shall support
GERAN-GMSK TCH/F	6.60, 8.85 and 12.65 → Configuration A	6.60, 8.85 and 12.65 → Configuration A
GERAN-8PSK TCH/H	6.60, 8.85 and 12.65 → Configuration A	6.60, 8.85 and 12.65 → Configuration A
GERAN-8PSK TCH/F	6.60, 8.85, 12.65, 15.85 and 23.85 → Configurations A, B and C	6.60, 8.85 and 12.65 → Configuration A *

UTRAN	6.60, 8.85, 12.65, 15.85 and 23.85 → Configurations A, B and C	6.60, 8.85 and 12.65 → Configuration A *

*) Support for configurations B and C is optional

2.3 Extended Transparent End-to-end Packet Switched Streaming Service (PSS-E)

Preparation of TR 26.937 "RTP Usage Model" is the only remaining issue for Rel-5 Streaming. Due to slow progress the current finalisation target of TSG-SA#18 may be challenging. This TR is not critical as it gives additional explanation and characterisation of the streaming service.

Table 3: Status list of specifications for PSS-E under SA4 responsibility

Deliverable	Title	Latest version	Comment/Status	Approval
TS 26.233	Packet-switched Streaming Services (PSS); General Description	5.0.0	PSS-E for Rel-5 was brought through CRs to the existing Rel-4 TS.	Approved at TSG-SA#15
TS 26.234	Packet-switched Streaming Services (PSS); Protocols and Codecs	5.1.0	PSS-E for Rel-5 was brought through CRs to the existing Rel-4 TS.	Approved at TSG-SA#15
TR 26.937	Packet-switched Streaming Services (PSS); RTP usage model	-	Discussions and initial drafting ongoing in SA4. Recent progress has been slow.	Target for approval is TSG-SA#18.

CRs on some corrections to TS 26.234 "Packet-switched Streaming Services (PSS); Protocols and Codecs" are brought for approval in Tdoc SP-020439. These include correction to complete the mapping of SDP parameters to UMTS QoS parameters for streaming applications.

2.4 Multimedia Codecs and Protocols for Conversational Packet Switched Services (part of feature Provisioning of IP Based Multimedia Services)

At TSG-SA#16, the lack of progress for TR 26.xyz "Performance characterization of default codecs for PS conversational multimedia applications" was reported. In MCC review of the 3GPP Work Plan (Tdoc SP-020402), it was concluded that interested companies are encouraged to start the work or otherwise the TR is to be deleted at TSG-SA#17.

At SA4#22, the content of the TR was debated and methodology for testing codecs in conversational PS services was discussed. SA4 noted that more consideration, effort and time is needed for the work. As more time and effort is required and the work is felt important, SA4 proposes to move the work (and respectively the TR) to Rel-6 under its own WID (in line with the outcome of the review of the Work Plan at TSG-SA#16). Consequently, a revised Rel-5 WID is presented in Tdoc SP-020434 (and a new Rel-6 WID is presented in Tdoc SP-020433).

In the work task "definition of QoS parameter values for various media types", SA4 is defining recommended tables for the mapping of SDP parameters to UMTS bearer QoS parameters for PS applications (for both conversational and streaming). The mapping table for Streaming was finalised during SA4#22. However, the finalisation of the mapping table for conversational services needs further work and it will be completed later. (Preliminary versions of the mapping tables were defined by TSG-SA#15 and these are already available in informative annexes in TSs 26.234 and 26.236.)

Table 4: Status list of specifications for Multimedia Codecs and Protocols for Conversational PS Services

Deliverable	Title	Latest Version	Comment/Status	Approval

Deliverable	Title	Latest Version	Comment/Status	Approval
TS 26.235	Packet Switched Conversational Multimedia Applications; Default Codecs	5.1.0	Approved at TSG-SA#11 in Tdoc SP-010095.	Approved at TSG-SA#11 for Rel-4. Moved to Rel-5 at TSG-SA#12.
TS 26.236	Packet Switched Conversational Multimedia Applications; Transport Protocols	5.0.0	Approved at TSG-SA#15 in Tdoc SP-020074.	Approved at TSG-SA#15
TR 26.xyz	Performance characterization of default codecs for PS conversational multimedia applications	-	At TSG-SA#16, interested companies were encouraged to start the work or otherwise the TR is to be deleted at TSG-SA#17. SA4 proposes at TSG-SA#17 this work to be moved for Rel-6 under own WID.	Target for approval is TSG-SA#18.

3. Release 6 work

3.1 Initial discussion on the content of Rel-6 Streaming

Discussion of work for Rel-6 streaming is ongoing jointly with other relevant WGs (SA1, SA2, SA3, SA5, T2). The SA4 part in the work would be on updating the Streaming specifications 26.233 “General description” and 26.234 “Codecs and formats” and on related issues with also the overall leadership proposed to be within SA4. Based on the communication so far, SA4 has prepared an initial draft WID which has been sent for review to the other WGs. The WI would be linked to many related WIs and work in other WGs (IMS, MMS, End-to-end QoS, MBMS, GUP, DRM, charging) carried out under the responsibility of the other WGs. SA1 and SA2 would have specific responsibility for Stage 1 and Stage 2, respectively.

SA4 and SA1 held a joint meeting on the scope and work plan of Rel-6 streaming on July 11th (during SA1 SWG meetings).

Annex C of this report contains an initial draft of the WID currently under review in the other WGs. The final version could be expected to be prepared (in collaboration with the other WGs) in time for approval at TSG-SA#18.

3.2 Proposed new WID: Performance characterization of default codecs for PS conversational multimedia applications

As explained above (in Section 2.4), the work to prepare TR 26.xyz “Performance characterization of default codecs for PS conversational multimedia applications” remains in a very initial phase and more effort and time is required. As the work is felt important, SA4 proposes to move the work (and respectively the TR) to Rel-6 under its own WID (in line with the outcome of the review of the 3GPP Work Plan at TSG-SA#16).

The objective in the new Rel-6 WI would be to characterize the performance of default codecs for PS conversational multimedia applications and the outcome would be to produce the characterisation TR for Rel-6. Testing of AMR-WB codec in PS conversational applications, intended originally as part of TR 26.976 (see Section 2.2) is planned to be done within the new WI and included in TR 26.xyz (Rel-6).

The new Rel-6 WID is presented in Tdoc SP-020433 (and the revised Rel-6 WID is presented in Tdoc SP-020434).

In the new WID, the need for funding of subjective testing is also raised, and needs to be acknowledged. The amount of funding depends on the test plan and would be assessed in detail during the early phase of the work.

3.3 Other issues

Digital Rights Management (DRM) feature contains “codec aspects” work task for SA4. The work in SA1 on Stage 1 has been followed. The SA4 part is to be carried out when SA4 involvement is needed.

4. Maintenance of releases (Change Requests)

CRs are presented for the following TSs: 26.093 (R99, Rel-4, Rel-5), 26.103 (Rel-5), 26.131 (R99, Rel-4, Rel-5), 26.132 (R99, Rel-4, Rel-5), 26.202 (Rel-5), 26.234 (Rel-5) and 28.062 (Rel-5):

a) Tdoc SP-020435 CRs to TS 26.131 “Terminal acoustic characteristics for telephony; Requirements” and TS 26.132 “Speech and video telephony terminal acoustic test specification”

(R99, Release 4 and Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.131	010	1	R99	Removal of wideband telephony from terminal acoustic requirements	F	3.3.0	S4	TSG-SA WG4#22	S4-020472
26.131	011	1	Rel-4	Removal of wideband telephony from terminal acoustic requirements	A	4.1.0	S4	TSG-SA WG4#22	S4-020473
26.131	012		R99	Correction on the ANR requirement for hands-free UEs	F	3.3.0	S4	TSG-SA WG4#22	S4-020386
26.131	013	1	Rel-4	Correction on the ANR requirement for hands-free UEs	A	4.1.0	S4	TSG-SA WG4#22	S4-020425
26.131	014		Rel-5	Correction on the ANR requirement for hands-free UEs	A	5.1.0	S4	TSG-SA WG4#22	S4-020426
26.132	012	1	R99	Removal of wideband telephony from terminal acoustic tests	F	3.4.0	S4	TSG-SA WG4#22	S4-020474
26.132	013	1	Rel-4	Removal of wideband telephony from terminal acoustic tests	A	4.2.0	S4	TSG-SA WG4#22	S4-020475
26.132	014		R99	Correction on ANR test for hands-free UEs	F	3.4.0	S4	TSG-SA WG4#22	S4-020388
26.132	015	1	Rel-4	Correction on ANR test for hands-free UEs	A	4.2.0	S4	TSG-SA WG4#22	S4-020427
26.132	016		Rel-5	Correction on ANR test for hands-free UEs	A	5.2.0	S4	TSG-SA WG4#22	S4-020428

b) Tdoc SP-020436 CRs to TS 26.093 “AMR speech Codec; Source Controlled Rate operation” on Corrections of Codec Type Names (R99, Release 4 and Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.093	007		R99	Correction of Codec Type Names	F	3.3.0	S4	TSG-SA WG4#22	S4-020453
26.093	008		Rel-4	Correction of Codec Type Names	A	4.0.0	S4	TSG-SA WG4#22	S4-020454
26.093	009		Rel-5	Correction of Codec Type Names	A	5.0.0	S4	TSG-SA WG4#22	S4-020455

c) Tdoc SP-020437 CRs to TSs 26.103 “Speech codec list for GSM and UMTS”, 26.202 “AMR speech codec, wideband; Interface to Iu and Uu” and 28.062 “Inband Tandem Free Operation (TFO) of speech codecs; Service description; Stage 3” (Release 5).

Note: This Tdoc contains the reduction of codec modes from 9 to 5 for speech telephony service as agreed at TSG-SA#15, and the further limitation of codec configurations into 3 as proposed in the LS in Tdoc SP-020422. Presentation of this Tdoc is conditional to the approval of the limitation as described in the LS in Tdoc SP-020422.

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.103	020	1	Rel-5	TrFO Signalling for allowed AMR-WB Configurations	F	5.2.0	S4	TSG-SA WG4#22	S4-020450
26.202	001	2	Rel-5	Consideration of allowed Configurations for AMR-WB	F	5.0.0	S4	TSG-SA WG4#22	S4-020487
28.062	030	1	Rel-5	TFO Signalling for allowed AMR-WB Configurations	F	5.1.0	S4	TSG-SA WG4#22	S4-020451
28.062	031	2	Rel-5	Simplified TFO decision for AMR-WB	F	5.1.0	S4	TSG-SA WG4#22	S4-020488

d) Tdoc SP-020438 CRs to TS 28.062 “Inband Tandem Free Operation (TFO) of speech codecs; Service description; Stage 3” (Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
28.062	033	2	Rel-5	TFO Signalling for preferred AMR-NB Configurations	F	5.1.0	S4	TSG-SA WG4#22	S4-020479
28.062	034		Rel-5	TFO Version Handling	F	5.1.0	S4	TSG-SA WG4#22	S4-020466

e) Tdoc SP-020439 CRs to TS 26.234 “End-to-end transparent streaming service; Protocols and codecs” (Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.234	030	2	Rel-5	Correction regarding support for Timed Text	F	5.1.0	S4	TSG-SA WG4#22	S4-020494
26.234	032	3	Rel-5	Required RTSP header support	F	5.1.0	S4	TSG-SA WG4#22	S4-020471
26.234	034	1	Rel-5	Including bitrate information for H.263	F	5.1.0	S4	TSG-SA WG4#22	S4-020490
26.234	035	1	Rel-5	RTCP Reports and Link Aliveness in Ready State	F	5.1.0	S4	TSG-SA WG4#22	S4-020489
26.234	036	2	Rel-5	Correction of media and session-level bandwidth fields in SDP	F	5.1.0	S4	TSG-SA WG4#22	S4-020491
26.234	037	2	Rel-5	Correction of usage of MIME parameters for AMR	F	5.1.0	S4	TSG-SA WG4#22	S4-020492
26.234	038	1	Rel-5	Correction of mapping of SDP parameters to UMTS QoS parameters (Annex J)	F	5.1.0	S4	TSG-SA WG4#22	S4-020470

5. Other issues

SA4 brings for the information of TSG-SA that AMR Noise Suppression (AMR-NS) algorithms from NEC were brought for validation to SA4#22. Two solutions were presented: NEC AMR-NS solution and NEC Low Complexity (LC) AMR-NS solution. SA4 analysed the presented test results, and endorsed both solutions. The endorsement means that SA4 considers the algorithms to meet the recommended minimum performance requirements given in TS 26.077 “Minimum Performance Requirements for Noise Suppresser; Application to the AMR Speech Encoder”. There are no other implications from this endorsement. (The endorsement procedure is explained in the scope section of TS 26.077.)

6. New TR for information

Version 1.0.0 of TR 26.976 “Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec” (Rel-5) is presented for information to TSG-SA in Tdoc SP-020432. (Versions 0.3.0 and 0.6.0 were presented for information earlier at TSG-SA meetings #12 and #14, respectively.)

This TR provides information of the results of Characterisation, Verification and Selection Phases of the AMR Wideband (AMR-WB) codec. Experimental test results from the speech quality related testing are reported to illustrate the behaviour of the AMR-WB codec. Additional information is provided, e.g., on implementation complexity of the codec.

Also, characterisation results from ITU-T G.722.2 codec (AMR-WB) testing are included as part of the TR in collaboration with ITU-T (preliminary version of ITU-T results, still subject to the ITU-T SG16 approval in October 2002).

Furthermore, the verification results for the floating-point version of the AMR-WB codec (defined in TS 26.204) are included.

7. Approval requested

SA4 requests TSG-SA#17 to approve the following:

Work Item Descriptions:

a) Tdoc SP-020433 New WID on Performance characterisation of default codecs for PS conversational multimedia application (Release 6)

b) Tdoc SP-020434 Revised WID on Multimedia codecs and protocols for conversational packet switched services (Release 5)

Limitation of AMR-WB codec mode configurations (for speech telephony service to three as requested in):

c) Tdoc SP-020422 Liaison Statement on Allowed AMR-WB Configurations

Change Requests:

d) Tdoc SP-020435 CRs to TS 26.131 and TS 26.132 - Corrections (R99, Release 4 and Release 5)

e) Tdoc SP-020436 CRs to TS 26.093 on Corrections of Codec Type Names (R99, Release 4 and Release 5)

f) Tdoc SP-020437 CRs to TSs 26.103, 26.202 and 28.062 on Simplified TFO decision for AMR-WB and TFO/TrFO Signalling for allowed AMR-WB Configurations (Release 5). **Note: This Tdoc contains the reduction of codec modes from 9 to 5 for speech telephony service as agreed at TSG-SA#15, and the further limitation of codec configurations into 3 as proposed in the LS in Tdoc SP-020422. Presentation of this Tdoc is conditional to the approval of the limitation as described in the LS in Tdoc SP-020422.**

g) Tdoc SP-020438 CRs to TS 28.062 on TFO Signalling for preferred AMR-NB Configurations and TFO Version Handling (Release 5).

h) Tdoc SP-020439 CRs to TS 26.234 - Corrections (Release 5)

ANNEX A: List of input documents to TSG-SA#17 from TSG-SA WG4

Tdoc	Title	Source	Agenda item	Document for
SP-020422	Liaison Statement on Allowed AMR-WB Configurations	SA WG4	7.4.3	Approval
SP-020431	TSG S4 Status Report at TSG-SA#17	SA WG4 Chairman	7.4.1	Information
SP-020432	3GPP Draft TR 26.976 version 1.0.0 “Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec” (Release 5)	SA WG4	7.4.3	Information
SP-020433	New WID on Performance characterisation of default codecs for PS conversational multimedia application (Release 6)	SA WG4	7.4.3	Approval
SP-020434	Revised WID on Multimedia codecs and protocols for conversational packet switched services (Release 5)	SA WG4	7.4.3	Approval
SP-020435	CRs to TS 26.131 and TS 26.132 - Corrections (R99, Release 4 and Release 5)	SA WG4	7.4.3	Approval
SP-020436	CRs to TS 26.093 on Corrections of Codec Type Names (R99, Release 4 and Release 5)	SA WG4	7.4.3	Approval
SP-020437	CRs to TSs 26.103, 26.202 and 28.062 on Simplified TFO decision for AMR-WB and TFO/TrFO Signalling for allowed AMR-WB Configurations (Release 5)	SA WG4	7.4.3	Approval (conditional)
SP-020438	CRs to TS 28.062 on TFO Signalling for preferred AMR-NB Configurations and TFO Version Handling (Release 5)	SA WG4	7.4.3	Approval
SP-020439	CRs to TS 26.234 - Corrections (Release 5)	SA WG4	7.4.3	Approval

ANNEX B: Slides presentation of the SA4 status report

(Included in separate file: “SP-020431 Annex B – Slides presentation.ppt”)

☞ *These slides: Annex B of the report (Tdoc SP-020431)*

TSG-SA WG4 (SA4) Status Report at TSG-SA#17

Kari Järvinen
TSG-SA WG4 Chairman

Content

- **General issues** 
- **Review of SA4 work progress (Rel-5, Rel-6)**
- **Other issues (for information)**
- **Documents for information**
- **Approval requested**

General: SA4 officials

(No changes)

- **Chairman:** **Kari Järvinen (Nokia / ETSI)**
- **Vice Chairman:** **Tomoyuki Ohya (NTT DoCoMo / ARIB)**
- **Secretary:** **Paolo Usai (3GPP Support)**
- **Sub Working Groups:**
  - **Speech Quality (SQ):** **Paolo Usai (ETSI)**
  - **Tandem Free Operation (TFO):** **Clemens Suerbaum (Siemens / ETSI)**
  - **Packet Switched Multimedia (PSM):** **Rolf Hakenberg (Panasonic / ETSI)**

- **The two year period of the SA4 Chairman expired at SA4#22 (July 2002). Kari Järvinen was nominated (as the only candidate) for a second 2 year period.**

General: SA4 meetings

- **Meetings held:**

  SA4#22: July 22-26, 2002 Host: Nokia, Venue: Tampere, Finland

- **Future meetings:**

  SA4#23: Sept 30 - Oct 4, 2002 Host: VoiceAge, Venue: Montreal, Canada
  SA4#24: Nov 11-15, 2002 Host: Microsoft, Venue: tbd
  SA4#25: Jan 20-24, 2003 Host: AT&T Wireless Services, Venue: San Francisco, USA
  SA4#25bis: Feb 24 – 28, 2003 Host: tbd, Venue: tbd
  SA4#26: May 05 – 09, 2003 Host: tbd, Venue: tbd
  SA4#27: July 07 – 11, 2003 Host: tbd, Venue: tbd
  SA4#28: Sept 01 – 05, 2003 Host: tbd, Venue: tbd
  SA4#29: Nov 24 – 28, 2003 Host: tbd, Venue; tbd

- **Meeting statistics (SA4#22):**
  - 1 week, ~50 participants
  - ~130 input documents
  - SWG sessions: PSM, SQ, TFO
  - 8 input LSs, 8 output LSs

General: Input documents

Tdoc	Title	Source	Agenda item	Document for
SP-020422	Liaison Statement on Allowed AMR-WB Configurations	SA WG4	7.4.3	Approval
SP-020431	TSG S4 Status Report at TSG-SA#17	SA WG4 Chairman	7.4.1	Information
SP-020432	3GPP Draft TR 26.976 version 1.0.0 “Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec” (Release 5)	SA WG4	7.4.3	Information
SP-020433	New WID on Performance characterisation of default codecs for PS conversational multimedia application (Release 6)	SA WG4	7.4.3	Approval
SP-020434	Revised WID on Multimedia codecs and protocols for conversational packet switched services (Release 5)	SA WG4	7.4.3	Approval
SP-020435	CRs to TS 26.131 and TS 26.132 - Corrections (R99, Release 4 and Release 5)	SA WG4	7.4.3	Approval
SP-020436	CRs to TS 26.093 on Corrections of Codec Type Names (R99, Release 4 and Release 5)	SA WG4	7.4.3	Approval
SP-020437	CRs to TSs 26.103, 26.202 and 28.062 on Simplified TFO decision for AMR-WB and TFO/TrFO Signalling for allowed AMR-WB Configurations (Release 5)	SA WG4	7.4.3	Approval (conditional)
SP-020438	CRs to TS 28.062 on TFO Signalling for preferred AMR-NB Configurations and TFO Version Handling (Release 5)	SA WG4	7.4.3	Approval
SP-020439	CRs to TS 26.234 - Corrections (Release 5)	SA WG4	7.4.3	Approval

Content

- **General issues**
- **Review of SA4 work progress (Rel-5, Rel-6)**
- **Other issues (for information)**
- **Documents for information**
- **Approval requested**

Review of work progress: Rel-5

- **Summary of remaining Rel-5 issues**

1) **Finalisation of 3 (non-critical) TRs**:
   - TR 26.976 ”Performance characterisation of the AMR-WB speech codec”
   - TR 26.937 “RTP usage model”
   - TR 26.xyz “Performance characterization of default codecs for PS conversational multimedia applications”

   TR 26.976 is progressing well: v1.0.0 presented for information at TSG-SA#17.

   For others, progress has been slower. However, as informative characterisation TRs the finalisation date is not critical. (Performance Characterisation TRs are always completed after the corresponding TSs, as they characterise the algorithms in the TSs.)

   The work for TR 26.xyx has not yet been started and the TR is proposed to be moved to Rel-6 under own new WID (in line with the review of the 3GPP Work Plan at TSG-SA#16).

2) **Completion of recommendation for QoS parameter values for conversational PS applications**:
   - Now completed for PS Streaming applications (CR to TS 26.234 brought for approval)
   - More work needed for Conversational PS applications. (Preliminary mapping table exists already in TS 26.236.)

Wideband Telephony Service – AMR (Rel-5)

- **The only remaining work is the finalisation of TR 26.976 "Performance Characterisation of the AMR-WB Speech Codec"**
  - V.1.0.0 is brought for information in **Tdoc SP-020432**. (Draft versions 0.3.0 and 0.6.0 presented earlier for information contained results from the 3GPP AMR-WB characterisation tests - main part of the TR.)
  - Main updates to v1.0.0:
    - confidence intervals marked in the figures of characterisation test results
    - additional test results from ITU-T G.722.2 characterisation tests included in collaboration with ITU-T (preliminary version still subject to ITU-T SG16 approval in October 2002)
    - the reduction of modes for speech telephony service (from 9 to 5) taken into account
    - all verification test results included
    - editorial improvements
  - A planned listening test on PS conversational and streaming applications was agreed earlier by SA4 not to be included in the TR. A new Rel-6 WID is now proposed to evaluate the performance of default codecs (including the AMR-WB) in PS conversational applications.
  - Testing of AMR-WB in EDGE 8-PSK channels will not be carried out by means of internationally co-ordinated testing houses, but instead results made available in GERAN (contributions by individual Companies) will be included later in the TR.

Wideband Telephony Service – AMR (Rel-5)

- **Reduction of AMR-WB codec mode configurations for speech telephony service**
  - Reduction of the number of AMR-WB modes from 9 to 5 for speech telephony service was agreed to at TSG-SA#15 (as proposed by SA4 in Tdoc SP-020009). The reduced set consists of modes 23.85, 15.85, 12.65, 8.85 and 6.60 kbit/s, with requirements:
    - For terminal, 3 lowest modes shall be supported in all RATs (GERAN-GMSK TCH/F, GERAN-8PSK TCH/F and TCH/H, UTRAN), and, additionally, 2 highest modes shall be supported in GERAN-8PSK TCH/F and UTRAN.
    - For network, the 3 lowest modes shall be supported

    At TSG-SA#15, SA4 was tasked to make the necessary changes to SA4 specifications. (Also, other TSGs/WGs were asked to take the impact into account.)
  - As indicated at TSG-SA#15 (in the SA4 LS proposing the mode reduction) and further explained at TSG-SA#16 (in SA4 progress report), SA4 has discussed further restrictions for the allowed AMR-WB mode configurations within active codec sets (ACS), i.e., which modes can be configured to be used within the mode adaptation at the same time.
  - SA4 proposes that in addition to reduction of the number of modes to 5, the number of allowed ACS configurations would be restricted into the following three:
    - **Configuration A**: 6.60 / 8.85 / 12.65 kbit/s
    - **Configuration B**: 6.60 / 8.85 / 12.65 / 15.85 kbit/s
    - **Configuration C**: 6.60 / 8.85 / 12.65 / 23.85 kbit/s

Wideband Telephony Service – AMR (Rel-5)

- These configurations are sufficient from the speech quality point of view.
- They are always TFO/TrFO compatible as they all contain several (3) common modes enabling immediate TFO/TrFO establishment. This would greatly improve TFO/TrFO interoperability and simplify establishment of TFO/TrFO operation, and would minimise the need for bearer modifications.
- AMR-WB needs transparent channel between MSs, and therefore to simplify TFO/TrFO establishment is especially important for AMR-WB.
- This proposal would also simplify signalling (e.g., in call set-up and handovers) and testing.
- A 4th configuration (8.85 / 12.65 / 15.85 / 23.85) was considered as one more possible/useful configuration but was finally omitted since it is not well compatible to the other three ones (as mode 6.60 kbit/s is missing). One company supported an alternative set of 3 configurations but did not formally object the SA4 agreement on the three configurations A, B and C.
- LS in **Tdoc SP-020422**:
  - SA4 asks TSG-SA to approve the proposal of reducing the AMR-WB mode configurations within ACS into three.
  - If approved, SA4 asks (in the LS sent also to the other TSGs) all TSGs to take actions to incorporate changes (if needed) into TSs under their responsibility. (Thereby extending the TSG-SA#15 request also on the limitation of allowed configurations.)

Wideband Telephony Service – AMR (Rel-5)

- SA4 already took action to prepare CRs to relevant SA4 TSs (26.103, 26.202 and 28.062) for both **1)** the reduction of codec modes for speech telephony service from 9 to 5, and **2)** the further limitation of configurations into 3.
- As the reduction of codec modes and limitation of allowed ACS configurations are very related, SA4 brings both in the same CRs in **Tdoc SP-020437.** (Presented for approval conditionally to TSG-SA approval of the content of the LS.)
- At TSG-SA#15, TS 26.103 (Codec Lists) was indicated as one impacted TS. SA4 proposes to put normative requirements into it. (Contains already normative requirements for support of UMTS_AMR and UMTS_AMR2 codec types.)
- Table below illustrates the requirements (from TSG-SA#15 Tdoc SP-020009) in terms of the proposed 3 ACS configurations A, B and C:

Speech telephony service channel	Terminal shall support	Network shall support
GERAN-GMSK TCH/F	6.60, 8.85 and 12.65 → Configuration A	6.60, 8.85 and 12.65 → Configuration A
GERAN-8PSK TCH/H	6.60, 8.85 and 12.65 → Configuration A	6.60, 8.85 and 12.65 → Configuration A
GERAN-8PSK TCH/F	6.60, 8.85, 12.65, 15.85 and 23.85 → Configurations A, B and C	6.60, 8.85 and 12.65 → Configuration A *
UTRAN	6.60, 8.85, 12.65, 15.85 and 23.85 → Configurations A, B and C	6.60, 8.85 and 12.65 → Configuration A *

*) Support for configurations B and C is optional

Extended Transparent End-to-end Packet Switched Streaming Service (Rel-5)

- **Preparation of TR 26.937 "RTP Usage Model" is the only remaining issue for Rel-5 Streaming.**
  - Due to slow progress the finalisation target of TSG-SA#18 is challenging. This TR is not critical as it gives additional explanation and characterisation of the streaming service.

- **CRs**
  - Corrections to TS 26.234 "Packet-switched Streaming Services (PSS); Protocols and Codecs" in **Tdoc SP-020439**. (These include correction to finalise the mapping of SDP parameters to UMTS QoS parameters.)

Multimedia Codecs and Protocols for Conversational PS Services (Rel-5)

[part of feature Provisioning of IP Based Multimedia Services, IMS]

- **TR 26.xyz "Performance characterization of default codecs for PS conversational multimedia applications"**
  - At TSG-SA#16, the lack of progress for TR 26.xyz "Performance characterization of default codecs for PS conversational multimedia applications" was reported.
  - In MCC review of the 3GPP Work Plan, it was concluded that interested companies are encouraged to start the work or otherwise the TR is to be deleted at TSG-SA#17.
  - At SA4#22, the content of the TR was debated and methodology for testing codecs in conversational PS services was discussed. SA4 noted that more consideration, effort and time is needed for the work. As more time and effort is required and the work is felt important, SA4 proposes to move the characterisation work (and respectively the TR) to Rel-6 under its own WID (in line with the outcome of the review of the Work Plan at TSG-SA#16).
  - Consequently, a revised Rel-5 WID (and a new Rel-6 WID) will be presented for approval at TSG-SA#17.

Multimedia Codecs and Protocols for Conversational PS Services (Rel-5)

[part of feature Provisioning of IP Based Multimedia Services, IMS]

- **In work task "definition of QoS parameter values for various media types", SA4 is defining recommended tables for the mapping of SDP parameters to UMTS bearer QoS parameters**
  - The mapping table for PS Streaming services is now finalised: CR to TS 26.234 is brought for approval to TSG-SA#17.
  - However, the finalisation of the mapping table for PS Conversational services needs further work and it will be completed later. (Preliminary version already available in informative annex of TS 26.236.)

Review of work progress: Rel-6

- **Preparation of WID for Rel-6 Streaming in progress with other WGs**
  - Initial discussion of the content of Rel-6 Streaming in progress with other relevant WGs (SA1, SA2, SA3, SA5, T2). SA4 and SA1 held a joint meeting on the scope and work plan of Rel-6 streaming on July 11th (during SA1 SWG meetings).
  - Based on the discussion so far, SA4 has prepared an initial draft WID which has been sent for review to the other WGs. (See Annex C of **Tdoc SP-020431**.) The WID could be expected to be finalised (in collaboration with the other WGs) in time for approval at TSG-SA#18.
  - The WID covers the SA4 part in Rel-6 Streaming work which would be on updating the Streaming specifications 26.233 “General description” and 26.234 “Codecs and formats” and on related issues (e.g., consideration of introduction of new codecs and related formats, file format issues, support for service adaptation (beyond existing capability exchange), monitoring of application level QoS, sustaining harmonisation with MMS).
  - SA1 and SA2 would have specific responsibility for Stage 1 and Stage 2, respectively.
  - The overall leadership of Rel-6 Streaming could be within SA4.
  - The WI would be linked to many related WIs and work in other WGs (IMS, MMS, End-to-end QoS, MBMS, GUP, DRM, charging) under the responsibility of the other WGs.

Review of work progress: Rel-6

- **Proposed new WID: Performance characterization of default codecs for PS conversational multimedia applications**
  - The work to prepare TR 26.xyz “Performance characterization of default codecs for PS conversational multimedia applications” (Rel-5) remains in a very initial phase and more effort and time is required.
  - As the work is felt important, SA4 proposes to move the work (and respectively the TR) to Rel-6 under its own WID (in line with the outcome of the review of the Work Plan at TSG-SA#16).
  - The objective in the new WI would be to characterize the performance of default codecs for PS conversational multimedia applications and the outcome would be to produce the characterisation TR for Rel-6. (Testing of AMR-WB codec in PS conversational applications, intended originally as part of TR 26.976, would be done as part of the new WI.)
  - A new Rel-6 WID and revised Rel-5 WID are presented for approval in **Tdocs SP-020433 and SP-020434**, respectively.
  - In the new WID, the need for funding of subjective testing is also raised, and needs to be acknowledged. The amount of funding depends on the test plan and would be assessed in detail during the early phase of the work.

Content

- **General issues**
- **Review of SA4 work progress (Rel-5, Rel-6)**
- **Other issues (for information)** 
- **Documents for information**
- **Approval requested**

Other issues (for information)

- SA4 brings for the information of TSG-SA that **AMR Noise Suppression (AMR-NS)** algorithms from NEC were brought for validation to SA4#22. Two solutions were presented: NEC AMR-NS solution and NEC Low Complexity (LC) AMR-NS solution. SA4 analysed the presented test results, and endorsed both solutions. The endorsement means that SA4 considers the algorithms to meet the recommended minimum performance requirements given in TS 26.077 “Minimum Performance Requirements for Noise Suppresser; Application to the AMR Speech Encoder”. There are no other implications from this endorsement. (The endorsement procedure is explained in the scope section of TS 26.077.)

Content

- **General issues**
- **Review of SA4 work progress (Rel-5, Rel-6)**
- **Other issues (for information)**
- **Documents for information**
- **Approval requested**

New TR for information

- **Version 1.0.0 of TR 26.976 "Performance Characterisation of the Adaptive Multi-Rate Wideband (AMR-WB) Speech Codec" (Rel-5) in Tdoc SP-020432.**
  - Versions 0.3.0 and 0.6.0 presented for information earlier at TSG-SA#12 and #14.
  - TR provides information of the results of AMR-WB
    - Characterisation Phase (including results from ITU-T)
    - Verification Phase
    - Selection Phase
  - Listening test results from internationally coordinated 3GPP AMR-WB characterisation tests form the main part. Results from ITU-T G.722.2 codec (AMR-WB) characterisation tests now included in collaboration with ITU-T (preliminary version of ITU-T results, still subject to ITU-T SG16 approval in October 2002).
  - Complementing performance results (from individual companies) obtained during Verification Phase are included. Additional information is provided, e.g., on implementation complexity of the codec.
  - Performance results from Selection Phase are included (as annex).
  - Verification results for the floating-point version of the AMR-WB codec (defined in TS 26.204) are also included (as annex).

Content

- **General issues**
- **Review of SA4 work progress (Rel-5, Rel-6)**
- **Other issues (for information)**
- **Documents for information**
- **Approval requested** 

Approval Requested

- **Work Item Descriptions:**

  a) **Tdoc SP-020433** New WID on Performance characterisation of default codecs for PS conversational multimedia application (Release 6)

  b) **Tdoc SP-020434** Revised WID on Multimedia codecs and protocols for conversational packet switched services (Release 5)

(Discussion on slides 13 and 16)

Approval Requested

- **Limitation of AMR-WB codec mode configurations for speech telephony service**

  c) SA4 asks approval for the limitation of AMR-WB codec mode configurations for speech telephony service to 3 as requested in **Tdoc SP-020422** "Liaison Statement on Allowed AMR-WB Configurations"

  - This proposal is in-line with the earlier decision to reduce the number of AMR-WB modes for speech telephony service from 9 to 5 (at TSG-SA#15), and just proposes further restrictions for the allowed AMR-WB mode configurations within active codec sets (ACS). (See discussion on slides 9-11.)

Approval Requested

SA4 requests TSG-SA#17 to approve the following CRs:

d) Tdoc SP-020435 **CRs to TS 26.131 "Terminal acoustic characteristics for telephony; Requirements" and TS 26.132 "Speech and video telephony terminal acoustic test specification" (R99, Release 4 and Release 5)**

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.131	010	1	R99	Removal of wideband telephony from terminal acoustic requirements	F	3.3.0	S4	TSG-SA WG4#22	S4-020472
26.131	011	1	Rel-4	Removal of wideband telephony from terminal acoustic requirements	A	4.1.0	S4	TSG-SA WG4#22	S4-020473
26.131	012		R99	Correction on the ANR requirement for hands-free UEs	F	3.3.0	S4	TSG-SA WG4#22	S4-020386
26.131	013	1	Rel-4	Correction on the ANR requirement for hands-free UEs	A	4.1.0	S4	TSG-SA WG4#22	S4-020425
26.131	014		Rel-5	Correction on the ANR requirement for hands-free UEs	A	5.1.0	S4	TSG-SA WG4#22	S4-020426
26.132	012	1	R99	Removal of wideband telephony from terminal acoustic tests	F	3.4.0	S4	TSG-SA WG4#22	S4-020474
26.132	013	1	Rel-4	Removal of wideband telephony from terminal acoustic tests	A	4.2.0	S4	TSG-SA WG4#22	S4-020475
26.132	014		R99	Correction on ANR test for hands-free UEs	F	3.4.0	S4	TSG-SA WG4#22	S4-020388
26.132	015	1	Rel-4	Correction on ANR test for hands-free UEs	A	4.2.0	S4	TSG-SA WG4#22	S4-020427
26.132	016		Rel-5	Correction on ANR test for hands-free UEs	A	5.2.0	S4	TSG-SA WG4#22	S4-020428

Approval Requested

e) Tdoc SP-020436 **CRs to TS 26.093 "AMR speech Codec; Source Controlled Rate operation" (R99, Release 4 and Release 5)**

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.093	007		R99	Correction of Codec Type Names	F	3.3.0	S4	TSG-SA WG4#22	S4-020453
26.093	008		Rel-4	Correction of Codec Type Names	A	4.0.0	S4	TSG-SA WG4#22	S4-020454
26.093	009		Rel-5	Correction of Codec Type Names	A	5.0.0	S4	TSG-SA WG4#22	S4-020455

f) Tdoc SP-020437 **CRs to TSs 26.103 "Speech codec list for GSM and UMTS", 26.202 "AMR speech codec, wideband; Interface to Iu and Uu" and 28.062 "Inband Tandem Free Operation (TFO) of speech codecs; Service description; Stage 3" (Release 5)**

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.103	020	1	Rel-5	TrFO Signalling for allowed AMR-WB Configurations	F	5.2.0	S4	TSG-SA WG4#22	S4-020450
26.202	001	2	Rel-5	Consideration of allowed Configurations for AMR-WB	F	5.0.0	S4	TSG-SA WG4#22	S4-020487
28.062	030	1	Rel-5	TFO Signalling for allowed AMR-WB Configurations	F	5.1.0	S4	TSG-SA WG4#22	S4-020451
28.062	031	2	Rel-5	Simplified TFO decision for AMR-WB	F	5.1.0	S4	TSG-SA WG4#22	S4-020488

Note: This Tdoc contains the reduction of codec modes from 9 to 5 for speech telephony service as agreed at TSG-SA#15, and the further limitation of codec configurations into 3 as proposed in the LS in Tdoc SP-020422. Presentation of this Tdoc is conditional to the approval of the limitation as described in the LS in Tdoc SP-020422.

Approval Requested

g) Tdoc SP-020438 CRs to TS 28.062 "Inband Tandem Free Operation (TFO) of speech codecs; Service description; Stage 3" (Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
28.062	033	2	Rel-5	TFO Signalling for preferred AMR-NB Configurations	F	5.1.0	S4	TSG-SA WG4#22	S4-020479
28.062	034		Rel-5	TFO Version Handling	F	5.1.0	S4	TSG-SA WG4#22	S4-020466

h) Tdoc SP-020439 CRs to TS 26.234 "End-to-end transparent streaming service; Protocols and codecs" (Release 5)

Spec	CR	Rev	Phase	Subject	Cat	Vers	WG	Meeting	S4 doc
26.234	030	2	Rel-5	Correction regarding support for Timed Text	F	5.1.0	S4	TSG-SA WG4#22	S4-020494
26.234	032	3	Rel-5	Required RTSP header support	F	5.1.0	S4	TSG-SA WG4#22	S4-020471
26.234	034	1	Rel-5	Including bitrate information for H.263	F	5.1.0	S4	TSG-SA WG4#22	S4-020490
26.234	035	1	Rel-5	RTCP Reports and Link Aliveness in Ready State	F	5.1.0	S4	TSG-SA WG4#22	S4-020489
26.234	036	2	Rel-5	Correction of media and session-level bandwidth fields in SDP	F	5.1.0	S4	TSG-SA WG4#22	S4-020491
26.234	037	2	Rel-5	Correction of usage of MIME parameters for AMR	F	5.1.0	S4	TSG-SA WG4#22	S4-020492
26.234	038	1	Rel-5	Correction of mapping of SDP parameters to UMTS QoS parameters (Annex J)	F	5.1.0	S4	TSG-SA WG4#22	S4-020470

(end of presentation)

ANNEX C: Initial draft of WID for Rel-6 Streaming (Tdoc S4-020483)

Note: This is (initial) draft WID which has been prepared by SA4 for basis of discussion for the other relevant WGs (SA1, SA2, SA3, SA5, T2) and it is currently under review and discussion among the WGs. The final version could be expected to be prepared (in collaboration with the other WGs) in time for approval at TSG-SA#18.

DRAFT Work Item Description PSS Rel-6

Title

PSS Rel-6

1 3GPP Work Area

	Radio Access
	Core Network
✓	Services

2 Linked work items

IMS Phase2(Internet Protocol Multimedia Sub-system)
MMS (Multimedia Messaging Service) (expected to be a part of Rel-6)
End to End QoS (Concept and Architecture) for PS Domain
MBMS
GUP
DRM

3 Justification

Following on from the PSS-E specifications developed under Rel-5, there is now a need to address more advanced aspects under Rel-6.

4 Objective

Standardization of the components of a mobile multimedia content delivery service, including streaming protocols, media transport protocols and multimedia codecs.

Harmonization with existing and emerging 3GPP multimedia applications will be considered whenever possible.

PSS Rel-6 solution will be based on and therefore should provide full backwards compatibility with the Rel5 Extended Streaming solution.

This work item will cover:

- Support for service adaptation
  - Enabling adaptation based on capability exchange, including user preferences.
  - Support adaptation to varying network conditions.
  - Adaptation to network capabilities and characteristics (GERAN, UTRAN and WLAN).
- Consideration of introduction of new codecs and formats.
- Harmonized streaming support for MMS.
- Consideration of introduction of a server file format and a file format for progressive download.
- Real time monitoring of application level QoS.

The following bullets are related to the linked work items (under the responsibility of other working groups):

- DRM specific impacts on PSS, if any.
- IMS specific impacts on PSS, if any.
- MBMS specific impacts on PSS, if any.
- Charging specific impacts on PSS, if any.

5 Service Aspects

The WI will define the necessary components for a mobile streaming service.

6 MMI-Aspects

None

7 Charging Aspects

The mobile streaming application will allow various charging models.

8 Security Aspects

Transport and content security aspects will be covered. Possibility for harmonization of security mechanisms between different multimedia applications will be considered.

9 Impacts

Affects:	USIM	ME	AN	CN	Others
Yes		✓			
No					
Don't know	✓		✓	✓	

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
26.233		Transparent end-to-end packet switched streaming service; General description (PSS)	SA#	Rel-6
26.234		Transparent end-to-end packet switched streaming service; Protocol and codecs (PSS)	SA#	Rel-6
22.233		Stage 1, streaming		SA1 is responsible for this document
		Stage2, streaming (non-transparent aspects)		SA2 is responsible for this potential document

11 Work item raporteurs

Olle Franceschi

12 Work item leadership

TSG-SA WG 4

13 Supporting Companies

AT&T Wireless, Ericsson, Nokia, NTT DoCoMo, Philips, Emblaze Systems, Orange, Serome Technology, Packet Video, Vimatix, Hutchison 3G, Siemens, Microsoft, Coding Technologies, Fraunhofer

14 Classification of the WI (if known)

X	Feature (go to 14a)
	Building Block (go to 14b)
	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

(list of Work Items identified as building blocks)

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

14c The WI is a Work Task: parent Building Block

(one Work Item identified as a building block)