3GPP TSG-T (Terminals) Meeting #12
Stockholm, Sweden, 13 - 15 June 2001

Tdoc TP-010144

3GPP TSG CN SA4 Meeting #17
4 - 8 June 2001, Naantali, Finland

Tdoc S4-010389

Title: Liaison on UMTS_AMR2
(Reference: S4-010243)

Source: TSG-SA WG4

To: TSG-T

CC: -

Contact Person:
Name: Clemens Suerbaum
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We have unfortunately not yet received information from your side about the inclusion of codec type UMTS_AMR2 (which is of high importance to achieve 2G-3G interworking for the AMR codec family).

For your convenience we attach the latest communication by N4 (S4-010336) on this topic, as well as our original liaison (S4-010234).

Please provide us with information what implications the introduction of this codec type has to specifications under the responsibility of TSG-T and what their numbers are. This would help us to specify more exactly our intentions in case of future communications on topics like this.

Thank you very much in advance for you co-operation.

Attachments (2):


S4-010243.zip


S4-010336_LSbyN4_
UMTS_AMR_2.zip

Date of Next Meetings:

S4#17	3 – 7 September 2001,	Erlangen, Germany
TFO subgroup ad-hoc	11 – 12 October 2001,	Munich, Germany

3GPP TSG-SA4 **Tdoc S4-010243**

February 26 – March 2, 2001, Sophia Antipolis, France

Source:	**TSG-SA WG4**
To:	**TSG-CN WG4, TSG-RAN WG2, TSG-T, TSG-GERAN, TSG-RAN WG1**
CC:	**TSG-CN WG1**
Title:	**Draft LS Reply on** Codec Type UMTS_AMR_2
Contact:	Ericsson (Karl.Hellwig@eed.Ericsson.se)

TSG-SA WG4 (S4) would like to thank TSG-CN WG4 (SA4) for their LS (N4-010283 / S4-010173) on default configurations for handover from GSM to UMTS and for their support of the UMTS_AMR_2.

The preferred solution could be to modify the definition for UMTS_AMR to match exactly UMTS_AMR_2 characteristics. But it is understood that this is too late now: there are R99 UMTS_only terminals with UMTS_AMR.

Therefore it seems most appropriate to introduce an additional Codec Type UMTS_AMR_2 in 3G TS 26.103 and 3G TS 28.062.

Since both Codec Types are almost identical it is proposed that only one of both is included by the core network in the Codec Lists, to avoid duplication of configuration parameters. The UMTS_AMR_2 shall be the preferred one and UMTS_AMR shall be selected only if UMTS_AMR_2 is not available (i.e. R99 UMTS_only terminals).

UMTS_AMR_2 shall be a mandatory Codec Type in all UEs from REL 4 onwards.

It may be worth mentioning that UMTS_AMR_2 is TFO/TrFO compatible to all AMR Codec Types: FR_AMR, HR_AMR, UMTS_AMR and UMTS_AMR_2.

3GPP TSG-SA WG4
Naantali, Finland
4 - 8 June, 2001

Tdoc S4-010336

3GPP TSG CN WG4 Meeting #08
Rio Grande, PUERTO RICO, 14th - 18th May 2001

Tdoc N4-010788

Title: Liaison Statement reply to SA4 on Introduction of Codec Type UMTS_AMR_2

Source: TSG_CN WG4

To: TSG_SA WG4

cc: TSG_CN WG1, TSG_CN

Contact Person:
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1. Overall Description:

Reply to incoming LS **Tdoc S4-010243** (N4-010516).

CN4 kindly thanks SA4 for their LS regarding new codec type UMTS_AMR_2. Although there were no explicit actions from SA4, CN4 understood that updates to some specifications were necessary in order to describe the handling of this codec type as preferred, default codec for UMTS and thus take advantage of its introduction.

CN4 would like to inform SA4 that it has approved a CR on 3G TS 23.153 (CR025, Tdoc N4-010644, attached) and highlighted the need for a CR on 3G TS 24.008, which is under the control of TSG_CN WG1. It is understood that such a CR has been prepared but CN4 is not aware of the status of this CR.

2. Actions:

To SA WG4.

ACTION: CN4 kindly asks SA4 to take note of the changes we have made.

3. Date of Next CN4 Meetings:

CN4#9	9th – 13th July 2001	Dresden, Germany.

4. Attachments:

CR on 23.153 – Tdoc N4-010644

3GPP TSG-CN WG4 Meeting #08 **Tdoc N4-010644**
Rio Grande, Puerto Rico, 14-18 May 2001

CR-Form-v3

CHANGE REQUEST

⌘ **23.153** **CR** **025** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Default Codec For UMTS & GSM dual systems
Source:	⌘	Ericsson L.M.
Work item code:	⌘	OoBTC
Date:	⌘	2001-05-09
Category:	⌘	**F**
Release:	⌘	REL-4

Use one of the following categories:
F *(essential correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	SA4 approved a new codec type UMTS_AMR2, a superset of UMTS_AMR, to be used as default for dual system Ues in R99 and all Ues from REL4 onwards.
Summary of change:	⌘	Introduce text to describe the new default codec type and requirement for its selection by the Core Network
Consequences if not approved:	⌘	Interworking between TrFO and TFO will be hindered and unnecessary codec modifications may occur at inter-system handover.

Clauses affected:	⌘	5.6		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	~~Possible~~ Impacts to 24.008 where Default AMR codec is specified
Other comments:	⌘			

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

******First Modified Section ******

5.6 CN Node handling of Codec Types & Codec Modes

The supported codec list received by the MSC in DTAP protocol [2] has no priority, whereas the list sent in the OoBTC procedures is sent with a level of preference. The codec type UMTS_AMR2, see [5] for detailed description, shall always be given highest priority by the MSC. Dual system UEs (supporting GSM & UMTS radio accesses) shall support UMTS_AMR2 as their default; only for 'UMTS only' terminals may the MSC assume UMTS_AMR (R99 UMTS default codec) as their default. If no Codec List IE is received but the UE is dual system, the MSC shall assume UMTS_AMR2 as the supported codec type and shall signal this in the OoBTC codec negotiation. The UMTS_AMR2 codec type behaves as a FR_AMR codec in the UL and as a UMTS_AMR codec in the DL; this allows UMTS terminals to operate in TFO with a GSM terminal.

In order to support interworking with 2G systems it is recommended that MGWs support 2G EFR codecs and for GSM the FR AMR codec. In order to avoid modifications during handover between 2G and 3G systems the MSC nodes may give preference to a suitable 2G codec.

The originating CN node, while performing speech service negotiation with a terminating CN node, shall indicate the maximum number of modes that shall be selected during speech codec negotiation. This maximum number of supported modes may depend on optimisation strategies applied by the originating CN node.

The terminating CN node receiving this information compares the maximum number of modes received by the originating CN with its own one and shall decide on the minimum of both numbers to be applied as result of the negotiation.

The decision about the actual modes to be selected shall be left to the terminating CN node. In order to provide harmonisation of out of band codec negotiation (TrFO) and inband codec negotiation (TFO) very similar codec selection mechanisms as those being defined for TFO shall be applied for TrFO, see [10]. These rules shall be taken into account when forwarding a codec list from the originating node to proceeding node, both for TrFO and TFO.

Whenever one or several TrFO links have been already established and initialised, the CN node (e.g. the serving CN in case of Call Hold scenarios, the visited CN node in case of Call Forwarding scenarios, etc.) initiating a subsequent codec negotiation, shall give the already negotiated codec type, including its ACS, highest preference to reduce the possibility of performing bearer re-establishment or UP re-initialisation of the already established and initialised TrFO links.

When the MSC node requests a RAB assignment the Subflow Combinations provided shall either all be initialised by the RNC or all rejected with appropriate cause code.

The MSC shall always define "Discontinuous Transmission (DTX)" and "No Data" SDUs in addition to the negotiated speech modes. This is because for TrFO the RAB requested by one RNC must match that requested by the peer RNC – they are effectively the same RAB. If one MSC requires DTX support then the RAB requested by the far end MSC must also support DTX (even if it is not desired by that MSC). As no Out Of Band negotiation for DTX is supported nor DTX control to the UE, DTX shall be mandatory for TrFO connections.

****** End of the document ******