

**3GPP TSG CN Plenary Meeting #12  
Stockholm, Sweden, 13<sup>th</sup> - 15<sup>th</sup> June 2001**

**Tdoc NP-010297**

**Source:** TSG CN WG4  
**Title:** CRs on Rel-4 Work Item OOBTC  
**Agenda item:** 8.6  
**Document for:** APPROVAL

---

**Introduction:**

This document contains 1 CR on Rel-4 Work Item "OoBTC", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #12 for approval.

<b>Spec</b>	<b>CR</b>	<b>Rev</b>	<b>Doc-2nd-Level</b>	<b>Phase</b>	<b>Subject</b>	<b>Cat</b>	<b>Ver_C</b>
23.153	025		N4-010644	Rel-4	Default Codec For UMTS & GSM dual systems	F	4.1.0

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

<b>Title:</b>	⌘ Default Codec For UMTS & GSM dual systems		
<b>Source:</b>	⌘ CN4		
<b>Work item code:</b>	⌘ OoBTC	<b>Date:</b>	⌘ 2001-05-09
<b>Category:</b>	⌘ <b>F</b>	<b>Release:</b>	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> <b>F</b> (correction) <b>A</b> (corresponds to a correction in an earlier release) <b>B</b> (Addition of feature), <b>C</b> (Functional modification of feature) <b>D</b> (Editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> <b>2</b> (GSM Phase 2) <b>R96</b> (Release 1996) <b>R97</b> (Release 1997) <b>R98</b> (Release 1998) <b>R99</b> (Release 1999) <b>REL-4</b> (Release 4) <b>REL-5</b> (Release 5)

<b>Reason for change:</b>	⌘ 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.		
<b>Summary of change:</b>	⌘ Introduce text to describe the new default codec type and requirement for its selection by the Core Network		
<b>Consequences if not approved:</b>	⌘ Interworking between TrFO and TFO will be hindered and unnecessary codec modifications may occur at inter-system handover.		

<b>Clauses affected:</b>	⌘ 5.6		
<b>Other specs affected:</b>	⌘ <input checked="" type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	Possible impacts to 24.008 where Default AMR codec is specified
<b>Other comments:</b>	⌘		

### 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](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 \*\*\***