

Source: TSG CN WG 1
Title: CR to Rel-5 on Work Item AMRWB towards 24.008
Agenda item: 9.6
Document for: APPROVAL

Introduction:

This document contains 1 CR on **Rel-5 to Work Item "AMRWB"**, that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #14 for approval.

Spec	CR	Rev	Phase	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level
24.008	516	2	Rel-5	Use of Supported Codec List (SCL) IE for all codec types	B	5.1.0	5.2.0	N1-012018

CHANGE REQUEST

⌘ **24.008 CR 516** ⌘ ev 2- ⌘ Current version: **5.1.0** ⌘

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

Title:	⌘ Use of Supported Codec List (SCL) IE for all codec types		
Source:	⌘ Nokia		
Work item code:	⌘ AMR-WB	Date:	⌘ 29.11.2001
Category:	⌘ B	Release:	⌘ Rel-5
	<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>		<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>REL-4 (Release 4)</p> <p>REL-5 (Release 5)</p>

Reason for change: ⌘ In CN1# 21 during the joint GERAN2 – CN1 meeting, the following principle for the coding of SCL and BC IEs in 24.008 was agreed:

- BC needs to contain WB-AMR codepoints for A/Gb mode use. That is FR AMR-WB.
- Additionally to that the SCL must be able to indicate all WB-AMR codecs, that is FR AMR-WB and UMTS AMR-WB. (26.103 defines these).
- All supported GSM codecs must be copied to SCL also if the SCL must be sent to indicate UMTS codecs.

From Release 5 onwards, an MS supporting UMTS codec types other than UMTS AMR shall indicate all codecs for GSM in Supported Codecs IE . However, also in BC IE the MS indicates all GSM speech codecs it supports (including FR AMR-WB if it is supported).

From Release 5 onwards, an MS supporting only GSM codec types shall indicate all codecs for GSM it supports (including FR AMR-WB if it is supported) in BC IE.

From Release 5 onwards, an MSC would check the Supported Codecs IE and if it does not contain a list for GSM codecs then the Octet 3a in BC IE is used for GSM codecs.

If the list of GSM codecs is received in the Supported Codecs List IE then, Octet 3a information is ignored. This behaviour will ensure the backward compatibility in case of Rel5 MS and pre-Rel5 Core Network.

Summary of change: ⌘ The principle described in the *Reason for change* is applied to several chapters along the specification (Call establishment for Call Control procedures, Message definitions for Call Control and SCL IE coding).

Consequences if not approved:	⌘ 24.008 does not cover the case when WB-AMR service is provided via the A-interface. WB-AMR service is not applicable to the GERAN system with A-interface support.
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Clauses affected:	⌘ Chapters 5.2.1, 5.2.1.2, 5.2.1.11, 5.2.2.3.1, 5.2.2.3.2, 5.2.3.3, 5.3.4.3.2, 9.3.2.6, 9.3.8.1, 9.2.8.3, 9.3.17b.2, 9.3.17b.4, 9.3.23.1.16, 10.5.4.5, 10.5.4.32, 9.3.8
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘

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- 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://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 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*****

5.2.1 Mobile originating call establishment

The call control entity of the mobile station initiates establishment of a CC connection by requesting the MM sublayer to establish a mobile originating MM connection and entering the "MM connection pending" state. There are two kinds of a mobile originating call: basic call and emergency call. The request to establish an MM connection shall contain a parameter to specify whether the call is a basic or an emergency call. This information may lead to specific qualities of services to be provided by the MM sublayers. Timer T303 is started when the CM SERVICE REQUEST message is sent.

For mobile stations supporting eMLPP basic calls may optionally have an associated priority level as defined in 3GPP TS 23.067. This information may also lead to specified qualities of service to be provided by the MM sublayers.

While being in the "MM connection pending" state, the call entity of the mobile station may cancel the call prior to sending the first call control message according to the rules given in section 4.5.1.7.

The mobile station supporting multicall that is initiating an emergency call shall release one or more existing call to ensure the emergency call can be established if the multicall supported information stored in the mobile station described in section 5.2.1.2 and 5.2.2.1 indicates the network doesn't support multicall and some ongoing calls exists.

Having entered the "MM connection pending" state, upon MM connection establishment, the call control entity of the mobile station sends a setup message to its peer entity. This setup message is

- a SETUP message, if the call to be established is a basic call, and
- an EMERGENCY SETUP message, if the call to be established is an emergency call.

For UMTS speech calls no UMTS speech versions shall be included in *bearer capability IE*. For a ME which supports GSM and UMTS and supports more than GSM speech version 1 then speech versions for GSM shall be included in *Bearer Capability IE* and in *Supported Codec List IE* (see 10.5.4.32). For a UMTS established call these GSM speech versions shall be used by the network for handover to GSM. A ME which supports UMTS codecs different from the UMTS AMR codec shall include a list of supported codecs in *Supported Codec List IE*. Otherwise default UMTS AMR (see Chapter 5.2.1.11) speech version shall be assumed by the network.

For a GSM established call the list shall be used by the network for handover to UMTS.

The mobile station then enters the "call initiated" state. Timer T303 is not stopped.

The setup message shall contain all the information required by the network to process the call. In particular, the SETUP message shall contain the called party address information. If the mobile station supports multicall, it shall include the Stream Identifier (SI) information element. For the first call i.e. when there are no other ongoing calls the SI value shall be 1.

If timer T303 elapses in the "MM connection pending" state, the MM connection in progress shall be aborted and the user shall be informed about the rejection of the call.

*****Next Modified Section*****

5.2.1.2 Receipt of a setup message

In the "null" or "recall present" states, upon receipt of a setup message (a SETUP message or an EMERGENCY SETUP message, see section 5.2.1.1), the call control entity of the network enters the "call initiated" state. It shall then analyse the call information contained in the setup message.

In UMTS, network shall include the SI received in the SETUP message into the RABid and send it back to the mobile station. For RABid see 3GPP TS 25.413. If the network receives the SETUP message with no SI, the network shall set the SI value to 1.

- i) If, following the receipt of the setup message, the call control entity of the network determines that the call information received from the mobile station is invalid (e.g. invalid number), then the network shall initiate call clearing as defined in section 5.4 with one of the following cause values:

- # 1 "unassigned (unallocated) number"
- # 3 "no route to destination"
- # 22 "number changed"
- # 28 "invalid number format (incomplete number)"

- ii) If, following the receipt of the setup message, the call control entity of the network determines that a requested service is not authorized or is not available, it shall initiate call clearing in accordance with section 5.4.2 with one of the following cause values:

- # 8 "operator determined barring",
- # 57 "bearer capability not authorized",
- # 58 "bearer capability not presently available",
- # 63 "service or option not available, unspecified", or
- # 65 "bearer service not implemented".

- iii) Otherwise, the call control entity of the network shall either:

- send a CALL PROCEEDING message to its peer entity to indicate that the call is being processed; and enter the "mobile originating call proceeding" state.
- or: send an ALERTING message to its peer entity to indicate that alerting has been started at the called user side; and enter the "call received" state.
- or: send a CONNECT message to its peer entity to indicate that the call has been accepted at the called user side; and enter the "connect request" state.

The call control entity of the network may insert bearer capability information element(s) in the CALL PROCEEDING message to select options presented by the mobile station in the Bearer Capability information element(s) of the SETUP message. The bearer capability information element(s) shall contain the same parameters as received in the SETUP except those presenting a choice. Where choices were offered, appropriate parameters indicating the results of those choices shall be included.

The CALL_PROCEEDING message shall also contain the priority of the call in the case where the network supports eMLPP. Mobile stations supporting eMLPP shall indicate this priority level to higher sublayers and store this information for the duration of the call for further action. Mobile stations not supporting eMLPP shall ignore this information element if provided in a CALL_PROCEEDING message.

NOTE: If the network supports only R98 or older versions of this protocol and the priority is not included in the CALL_PROCEEDING message, this does not imply that the network does not support eMLPP.

- The CALL_PROCEEDING message shall contain the multicall supported information in the network call control capabilities in the case where the network supports multicall and there are no other ongoing calls to the MS. Mobile stations supporting multicall shall store this information until the call control state for all calls returns to null. Mobile stations not supporting multicall shall ignore this information if provided in a CALL_PROCEEDING message. If the multicall supported information is not sent in the CALL_PROCEEDING message, the mobile station supporting multicall shall regard that the network doesn't support multicall.

The call control entity of the network having entered the "mobile originating call proceeding" state, the network may initiate the assignment of a traffic channel according to section 5.2.1.9 (early assignment).

For UMTS speech calls no UMTS speech versions shall be included in *Bearer Capability IE*; if the SETUP includes a list of supported codecs in *Supported Codec List IE* then the network shall use this list to select the required codec type, see Chapter 5.2.1.11. ~~Otherwise the default UMTS AMR (see Chapter 5.2.1.11) speech version shall be assumed.~~

For a GSM established call the list shall be used by the network for handover to UMTS.

If no *Supported Codec List IE* is received by the network, then GSM speech versions received by the network in *Bearer Capability IE* shall be used by the network for GSM call establishment and handover to GSM. For GSM speech calls where no speech versions are included in *Bearer Capability IE* the network shall assume GSM speech version 1.

If *Supported Codec List IE* is received by the network, then GSM speech versions in *Supported Codec List IE* (for *Bearer Capability IE*) shall be used for GSM call establishment and handover to GSM.

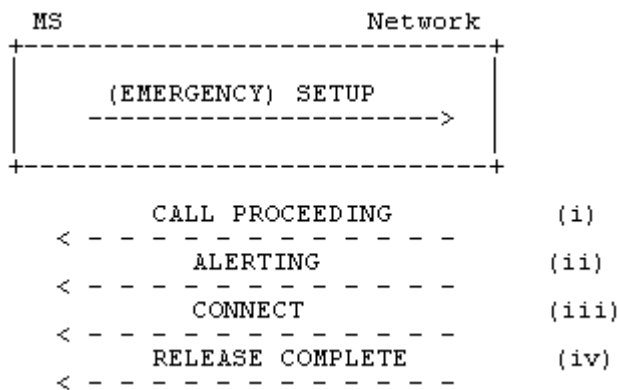


Figure 5.2/3GPP TS 24.008 Mobile originated call initiation and possible subsequent responses.

*****Next Modified Section*****

5.2.1.11 Speech Codec Selection

The network can receive *Supported Codec List IE* in call establishment messages from the ME to inform the network of the codec types that it supports.

If the network does not receive *Supported Codec List IE* then default UMTS AMR speech version shall be assumed for UMTS calls.

For GSM speech calls where the network does not receive *Supported Codec List IE* and no speech versions are included in *Bearer Capability IE* the network shall assume GSM speech version 1.

The default UMTS AMR speech version for “R99 UMTS only” terminals is UMTS_AMR. The default UMTS AMR speech version for terminals supporting GSM & UMTS radio accesses and all terminals from Release 4 onwards is UMTS_AMR_2. For further details see 3G TS 26.103.

Note: ‘UMTS_AMR_2’ is fully backward compatible with ‘UMTS_AMR’, therefore if the UE supports ‘UMTS_AMR_2’ and the network is R99 and assumes ‘UMTS_AMR’ then no interworking problems will occur.

The network shall determine the default UMTS AMR speech version by the following:

- i) If no GSM Speech Version codepoints are received in Supported Codec List IE or in octet 3a etc. of the *Bearer Capabilities IE* then a “UMTS only” terminal is assumed and the default UMTS AMR speech version shall be UMTS_AMR.
- ii) If at least one GSM Speech Version codepoint is received in Supported Codec List IE or in octet 3a etc. of the *Bearer Capabilities IE* then a terminal supporting GSM and UMTS is assumed and the default UMTS AMR speech version shall be UMTS_AMR_2.

If the *Supported Codec List IE* is received, the network shall select a codec from the list of codecs and indicate this to the ME via RANAP and RRC protocol in NAS Synchronisation Indicator IE. See 3GPP TS 25.413 and 3GPP TS 25.331.

Coding of the codec type (CoID) shall be, as defined in 3GPP 3GPP TS 26.103.

The network shall determine the preference for the selected codec type; codec type prioritisation is not provided by the ME.

The ME shall activate the codec type received in the NAS Synchronisation Indicator IE.

If the mobile station does not receive the NAS Synchronisation Indicator IE (RRC protocol) then it shall assume default UMTS AMR speech version.

For -adaptive multirate codec types no indication of subsets of modes is supported in this protocol, from the ME or to the ME. It is a pre-condition that the support of such codec types by the ME implicitly includes all modes defined for that codec type.

*****Next Modified Section*****

5.2.2.3.1 Response to SETUP

Having entered the "call present state" the call control entity of the mobile station shall - with the exception of the cases described below - acknowledge the SETUP message by a CALL CONFIRMED message, and enter the "mobile terminating call confirmed" state.

If the mobile station supports multicall, it shall include the Stream Identifier (SI) information element in the CALL CONFIRMED message.

- If the mobile station is located in the network supporting multicall, it shall never include the SI that is in use and shall include with either of the following two values:
- SI="no bearer"
- SI=new value (not used by any of the existing bearers)

If the mobile station supporting multicall is located in the network not supporting multicall, it shall include the SI with value 1.

The call control entity of the mobile station may include in the CALL CONFIRMED message to the network one or two bearer capability information elements to the network, either preselected in the mobile station or corresponding to a service dependent directory number (see 3GPP TS 29.007). The mobile station may also include one or two bearer capabilities in the CALL CONFIRMED message to define the radio channel requirements.

For a ME which supports more than GSM speech version 1 and supports UMTS codecs different from the UMTS AMR, speech versions for GSM shall be included in both Supported Codec List IE (see 10.5.4.32) and *Bearer Capability IE*.

A ME which supports UMTS codecs different from the UMTS AMR codec shall include the supported codecs in *Supported Codec List IE* in the CALL CONFIRMED message, otherwise default UMTS AMR (see Chapter 5.2.1.11) speech version shall be assumed by the network. In any case the rules specified in section 9.3.2.2 shall be followed.

For a UMTS established call GSM speech versions shall be used by the network for handover to GSM.

NOTE: The possibility of alternative responses (e.g., in connection with supplementary services) is for further study.

A busy MS which satisfies the compatibility requirements indicated in the SETUP message shall respond either with a CALL CONFIRMED message if the call setup is allowed to continue or a RELEASE COMPLETE message if the call setup is not allowed to continue, both with cause #17 "user busy".

If the mobile user wishes to refuse the call, a RELEASE COMPLETE message shall be sent with the cause #21 "call rejected".

In the cases where the mobile station responds to a SETUP message with RELEASE COMPLETE message the mobile station shall release the MM connection and enter the "null" state after sending the RELEASE COMPLETE message.

The network shall process the RELEASE COMPLETE message in accordance with section 5.4.

*****Next Modified Section*****

5.2.2.3.2 Receipt of CALL CONFIRMED and ALERTING by the network

The call control entity of the network in the "call present" state, shall, upon receipt of a CALL CONFIRMED message: stop timer T303, start timer T310 and enter the "mobile terminating call confirmed" state.

In UMTS, network shall include the SI received in the CALL CONFIRMED message into the RABid and send it back to the mobile station. For RABid see 3GPP TS 25.413. If the network receives the CALL CONFIRMED message with no SI, the network shall set the SI value to 1.

For UMTS speech calls no UMTS speech versions shall be included in *bearer capability IE*; if the CALL CONFIRMED message includes a list of supported codecs in *Supported Codec List IE* then the network shall use this list to select the required codec type, see Chapter 5.2.1.11. If no *Supported Codec List IE* is received by the network then default UMTS AMR (see Chapter 5.2.1.11) speech version shall be assumed.

GSM speech versions received by the network in *Bearer Capability IE* and *Supported Codec List IE* (see 10.5.4.32) shall be used by the network for GSM call establishment and handover to GSM. For GSM speech calls where no speech versions are included in *bearer capability IE* the network shall assume GSM speech version 1.

The call control entity of the mobile station having entered the "mobile terminating call confirmed" state, if the call is accepted at the called user side, the mobile station proceeds as described in 5.2.2.5. Otherwise, if the signal information element was present in the SETUP message user alerting is initiated at the mobile station side; if the signal information element was not present in the SETUP message, user alerting is initiated when an appropriate channel is available.

Here, initiation of user alerting means:

- the generation of an appropriate tone or indication at the mobile station; and
- sending of an ALERTING message by the call control entity of the MS to its peer entity in the network and entering the "call received" state.

The call control entity of the network in the "mobile terminated call confirmed" state shall, upon receipt of an ALERTING message: send a corresponding ALERTING indication to the calling user; stop timer T310; start timer T301, and enter the "call received" state.

In the "mobile terminating call confirmed" state or the "call received" state, if the user of a mobile station is User Determined User Busy then a DISCONNECT message shall be sent with cause #17 "user busy". In the "mobile terminating call confirmed" state, if the user of a mobile station wishes to reject the call then a DISCONNECT message shall be sent with cause #21 "call rejected".

*****Next Modified Section*****

5.2.3.3 CC-Establishment confirmation

The call control entity of the network in the "CC-establishment present" state, shall, upon receipt of a CC-ESTABLISHMENT CONFIRMED message, stop timer T333 and enter the "CC-establishment confirmed" state.

In the "CC-establishment confirmed" state, the network sends a RECALL message. This message initiates user alerting and also shall include the Facility IE (providing additional information to be presented to the user for notification). The network starts timer T334 and enters the 'recall present' state.

Upon reception of the RECALL message the Mobile station stops T335 and enters the "recall present" state.

Additionally, for UMTS speech calls a ME which supports more than UMTS AMR codec shall include the list of supported codecs in *Supported Codec List IE* in the ESTABLISHMENT-CONFIRMED message.

For speech calls a ME which supports UMTS codecs different from the UMTS AMR, shall include the list of supported codecs in the *Supported Codec List IE* in the ESTABLISHMENT CONFIRMED message. If this information element is not included then the network shall use GSM speech versions received in *Bearer Capability IE* for GSM calls.

A ME which supports only GSM codecs, shall include the list of supported codecs in *Bearer Capability IE* in the ESTABLISHMENT CONFIRMED message.

If a *Supported Codec List IE* is received the network shall use the codec list for codec selection. See 5.2.1.11. If no *Supported Codec List IE* is received by the network then default UMTS AMR (See Chapter 5.2.1.11) speech version shall be assumed for UMTS, and the network shall determine the supported GSM speech versions from the *Bearer Capability IE*.

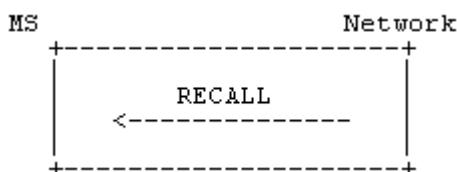


Figure 5.7b/3GPP TS 24.008 Recall

*****Next Modified Section*****

5.3.4.3.2 Successful completion of in-call modification

If the destination network/mobile station receives a MODIFY message with a new mode which is already the actual one of the call the network/mobile station shall remain in the "active" state; send a MODIFY COMPLETE message with the actual mode; and shall not initiate anything else.

If the requested mode is a speech mode and the call is UMTS then if the ME supports UMTS codecs different from the UMTS AMR codec (*Supported Codec List IE* received by the network) then the network shall select a codec from this list, otherwise default UMTS AMR (see Chapter 5.2.1.11) speech version shall be assumed. If a codec is selected other than default AMR, the network shall send the selected codec type to the ME via RANAP NAS Synchronisation Indicator IE (see 5.2.1.11),.

If the requested mode is speech and the call is GSM then if GSM speech versions are included in either *Supported Codec List IE* or in *Bearer Capability IE*, then the network shall use these speech versions, if none are included then GSM speech version 1 shall be assumed.

If the requested mode is not the actual one and can be supported by the destination interface it shall change the channel configuration, if required, and step on to any internal resources necessary to support the next call mode. If the requested mode is a data or facsimile mode, it shall also perform the appropriate means to take the direction of the data call into account. After successful change of the channel configuration it shall start sending user information according to the next call mode and start interpreting received user channel information according to the next call mode; send a MODIFY COMPLETE message with the new call mode included and enter the "active" state (mobile station or

network side). If the MODIFY message had contained a *reverse call setup direction* IE, the same IE shall be included in the MODIFY COMPLETE message.

In case of an alternate speech/facsimile group 3 service (refer to section 5.3.4) the old resources may still be kept reserved.

Upon receipt of the MODIFY COMPLETE message the originating side shall: initiate the alternation to those resources necessary to support the next call mode; stop timer T323; and enter the "active" state (mobile station or network side). The reaction of the originating side if it had included a reverse call setup direction IE in the MODIFY message, but the destination side did not include the IE in the MODIFY COMPLETE message is implementation dependent.

******Next Modified Section ******

9.3.2.6 Supported Codecs

This information element shall be included by the ME for UMTS speech calls for a ME which supports UMTS codecs different from the UMTS AMR codec. For speech calls a ME which supports UMTS codecs different from the UMTS AMR, shall include the list of supported codecs in *Supported Codec List IE* (see 10.5.4.32). If this information element is not included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

******Next Modified Section ******

9.3.8 Emergency setup

This message is sent from the mobile station to initiate emergency call establishment.

See table 9.62/3GPP TS 24.008.

Message type: EMERGENCY SETUP

Significance: global

Direction: mobile station to network

Table 9.62/3GPP TS 24.008: EMERGENCY SETUP message content

IEI	Information element	Type / Reference	Presence	Format	Length
	Call control protocol discriminator	Protocol discriminator 10.2	M	V	½
	Transaction identifier	Transaction identifier 10.3.2	M	V	½
	Emergency setup message type	Message type 10.4	M	V	1
04	Bearer capability	Bearer capability 10.5.4.5	O	TLV	3-119
2D	Stream Identifier	Stream Identifier 10.5.4.28	O	TLV	3
40	Supported Codecs	Supported Codec List 10.5.4.32	O	TLV	5-n
2E	Emergency category	Service category 10.5.4.33	O	TLV	3

9.3.8.1 Bearer capability

If the element is not included, the network shall by default assume speech and select full rate speech version 1. If this information element is included, it shall indicate speech, the appropriate speech version(s) and have the appropriate value of radio channel requirement field.

This information element shall be included by an ME supporting CTM text telephony.

For UMTS speech if no *Supported Codec List* IE is included then the network shall assume default UMTS AMR (see chapter 5.2.1.11) speech version and determine supported GSM speech versions from *Bearer Capability* IE.

For GSM speech if no *Supported Codec List* IE is included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

****Next Modified Section ****

9.3.8.3 Supported Codecs

This information element shall be included by the mobile station for UMTS speech calls for a ME which supports UMTS codecs different from the UMTS AMR codec. If this information element is not included then the network shall assume default UMTS AMR (see chapter 5.2.1.11) speech codec.

For speech calls a ME which supports UMTS codecs different from the UMTS AMR, shall include the list of supported codecs in *Supported Codec List* IE (see 10.5.4.32). If this information element is not included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

****Next Modified Section ****

9.3.17b.2 Bearer capability 1 and bearer capability 2

If, in any subsequent SETUP message to be sent on this transaction the *bearer capability 1* information element is to be followed by the *bearer capability 2* IE, then the *bearer capability 2* IE shall be included in this message.

For UMTS speech if no *Supported Codec List* IE is included then the default UMTS AMR (see chapter 5.2.1.11) speech version shall be assumed by the network.

For GSM speech if no *Supported Codec List* IE is included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

****Next Modified Section ****

9.3.17b.4 Supported Codecs

This information element shall be included by the mobile station for UMTS speech calls for a ME which supports UMTS codecs different from the UMTS AMR codec.

For speech calls a ME which supports UMTS codecs different from the UMTS AMR, shall include the list of supported codecs in *Supported Codec List* IE (see 10.5.4.32). If this information element is not included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

*****Next Modified Section*****

9.3.23.2.16 Supported Codecs

This information element shall be included by the mobile station for UMTS speech calls for a ME which supports UMTS codecs different from the UMTS AMR codec.

For speech calls a ME which supports UMTS codecs different from the UMTS AMR, shall include the list of supported codecs in *Supported Codec List* IE (see 10.5.4.32). If this information element is not included then the network shall use GSM speech versions received in *Bearer Capability* for GSM calls.

*****Next Modified Section*****

10.5.4.32 Supported codec list

The purpose of the *Supported Codec List* information element is to provide the network with information about the speech codecs supported by the mobile.

The *Supported Codec List* information element is coded as shown in figure 10.5.118c/3GPP TS 24.008.

The *Supported Codec List* information element is a type 4 information element with a minimum length of 5 octets and a maximum length of m+3 octets.

Speech codec information belonging to GSM and UMTS radio access shall be conveyed by this information element, when the ME supports UMTS codecs different from the UMTS AMR. GSM codecs are only included if the MS supports GSM speech codecs different from GSM speech version 1.

~~Speech codec information belonging to a GSM radio access shall not be conveyed by this information element, but by the *Bearer Capability* information element.~~

*****Last Modified Section*****

10.5.4.5 Bearer capability

The purpose of the bearer capability information element is to describe a bearer service. The use of the bearer capability information element in relation to compatibility checking is described in annex B.

The bearer capability information element is coded as shown in figure 10.5.88/3GPP TS 24.008 and tables 10.5.102/3GPP TS 24.008 to 10.5.115/3GPP TS 24.008.

The bearer capability is a type 4 information element with a minimum length of 3 octets and a maximum length of 16 octets.

Table 10.5.103/3GPP TS 24.008 Bearer capability information element

<p>Octet(s) 3a etc. MS to network direction</p> <p>Octet(s) 3a etc., bits 1 to 4 shall only be used to convey speech coding information belonging to a GSM radio access. When included for a UMTS call establishment they shall be used for handover to a GSM Radio Access.</p> <p>A mobile station supporting CTM text telephony, but not supporting GSM radio access shall encode octet 3a, bits 1 to 4 as "no speech version supported for GSM radio access".</p> <p>Coding</p> <p>Bit</p> <p>7</p> <p>0 octet used for extension of information transfer capability</p> <p>1 octet used for other extension of octet 3</p> <p>When information transfer capability (octet 3) indicates speech and coding (bit 7 in octet 3a etc.) is coded as 0, bits 1 through 6 are coded:</p> <p>CTM text telephony indication (octet 3a)</p> <p>Bit</p> <p>6</p> <p>0 CTM text telephony is not supported</p> <p>1 CTM text telephony is supported</p> <p>Bit 6 in octet(s) 3b etc. is spare.</p> <p>Bit 5 in octet(s) 3a etc. is spare.</p> <p>Speech version indication (octet(s) 3a etc.)</p> <p>Bits</p> <p>4 3 2 1</p> <p>0 0 0 0 GSM full rate speech version 1</p> <p>0 0 1 0 GSM full rate speech version 2</p> <p>0 1 0 0 GSM full rate speech version 3</p> <p><u>0 1 1 0 GSM full rate speech version 4</u></p> <p><u>1 0 0 0 GSM full rate speech version 5</u></p> <p>0 0 0 1 GSM half rate speech version 1</p> <p>0 1 0 1 GSM half rate speech version 3</p> <p><u>0 1 1 1 GSM half rate speech version 4</u></p> <p>1 1 1 1 no speech version supported for GSM radio access (note 1)</p> <p>All other values have the meaning "speech version tbd" and shall be ignored when received.</p> <p>Note 1: This value shall only be used by an MS supporting CTM text telephony, but not supporting GSM radio access.</p> <p>If octet 3 is extended with speech version indication(s) (octets 3a etc.), all speech versions supported shall be indicated and be included in order of preference (the first octet (3a) has the highest preference and so on).</p> <p>If information transfer capability (octet 3) indicates speech and coding (bit 7 in octet 3a etc.) is coded as 1, or the information transfer capability does not indicate speech, then the extension octet shall be ignored.</p> <p>Octet(s) 3a etc. network to MS direction</p> <p>The octet(s) 3a etc. shall be ignored by the MS.</p>
