# 3GPP TSG CN Plenary Meeting #17 4<sup>th</sup> - 6<sup>th</sup> September 2002. Biarritz, France.

NP-020370

Source: TSG CN WG 1

Title: CRs to R97 (with mirror CRs) on Work Item GTT towards 04.08 and 24.008

Agenda item: 7.12

**Document for:** APPROVAL

### **Introduction:**

This document contains 4 CRs on R97 including mirror CRs to Work Item "GTT", that have been agreed by TSG CN WG1, and are forwarded to TSG CN Plenary meeting #17 for approval.

Spec	CR #	Rev	CAT	Rel	Tdoc Title	Meeting	TDoc#	C_Version
04.08	A1121	1	F	R97	Support of GTT (CTM)	N1-25	N1-021861	6.15.0
04.08	A1123		Α	R98	Support of GTT (CTM)	N1-25	N1-021845	7.14.0
24.008	693	1	Α	R99	Support of GTT (CTM)	N1-25	N1-021862	3.12.0
24.008	694	1	Α	Rel-4	Support of GTT (CTM)	N1-25	N1-021863	4.7.0

### 3GPP TSG-CN1 Meeting #25 Helsinki, Finland, 29 July – 2 August

CHANGE REQUEST									
*	04.08 CR A1123 # rev - # 0	Current version: 7.14.0							
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <b>x</b> symbols.									
Proposed change affects: UICC apps# ME X Radio Access Network Core Network									
Title: ♯	Support of GTT (CTM)								
Source: #	Ericsson								
Work item code: ₩	GTT	Date: ₩ 30/07/2002							
Category:  # A  Use one of the following categories:  F (correction)  A (corresponds to a correction in an earlier release)  B (addition of feature),  C (functional modification of feature)  Petailed explanations of the above categories can be found in 3GPP TR 21.900.  Reason for change:  # R98  Use one of the following releases.  R96 (Release 1996)  R97 (Release 1997)  R98 (Release 1998)  R99 (Release 1999)  Rel-4 (Release 4)  Be found in 3GPP TR 21.900.  Rel-5 (Release 5)  Rel-6 (Release 6)									
Summary of chang	This CR introduces the possibility for the ME to Bearer Capability IE ("CTM text telephony ind This indication shall be included in the IE by the Emergency Setup messages to indicate its sure A R98 network does not support GTT and will 3a of the Bearer Capability. (This bit was definite protocol.)	he MS in the Call Confirmed and upport of GTT.  I ignore the contents of bit 6 of octet							
Consequences if not approved:		g.							
Clauses affected:	第 9.3.2.2, 9.3.8.1, 10.5.4.5, 10.5.4.5.1								
Other specs affected:	Y N  X Other core specifications   X Test specifications   O&M Specifications								
Other comments:	<b>x</b>								

### **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

### 9.3.2 Call confirmed

This message is sent by the called mobile station to confirm an incoming call request.

See table 9.56/GSM 04.08.

Message type: CALL CONFIRMED

Significance: local

Direction: mobile station to network

Table 9.56/GSM 04.08: CALL CONFIRMED message content

IEI	Information element	Type / Reference	Presence	Format	Length
	Call control protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2
	Call confirmed message type	Message type 10.4	M	V	1
D-	Repeat Indicator	Repeat Indicator 10.5.4.22	С	TV	1
04	Bearer capability 1	Bearer capability 10.5.4.5	0	TLV	3-15
04	Bearer capability 2	Bearer capability 10.5.4.5	0	TLV	3-15
08	Cause	Cause 10.5.4.11	0	TLV	4-32
15	CC Capabilities	Call Control Capabilities 10.5.4.5a	0	TLV	3

### 9.3.2.1 Repeat indicator

The *repeat indicator* information element shall be included if *bearer capability 1* information element and *bearer capability 2* IE are both included in the message.

### 9.3.2.2 Bearer capability 1 and bearer capability 2

The *bearer capability 1* information element shall be included if and only if at least one of the following <u>five six</u> cases holds:

- the mobile station wishes another bearer capability than that given by the *bearer capability 1* information element of the incoming SETUP message;
- the bearer capability 1 information element is missing or not fully specified in the SETUP message;
- —the *bearer capability 1* information element received in the SETUP message is accepted and the "radio channel requirement" of the mobile station is other than "full rate support only mobile station";
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports CTM text telephony;
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports other speech versions than GSM version 1;
- the *bearer capability 1* information element received in the SETUP message included the "fixed network user rate" parameter.

When the *bearer capability 1* information element is followed by the *bearer capability 2* IE in the SETUP, the above rules apply to both *bearer capability 1* IE and bearer capability 2 IE. Except those cases identified in GSM 07.01, if either *bearer capability* needs to be included, both shall be included.

Furthermore, both *bearer capability* information elements may be present if the mobile station wishes to reverse the order of occurrence of the *bearer capability* information elements (which is referred to in the *repeat indicator* information element, see clause 10.5.4.22) in cases identified in GSM 07.01.

### \*\*\*\*\*\*\* 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/GSM 04.08.

Message type: EMERGENCY SETUP

Significance: global

Direction: mobile station to network

#### Table 9.62/GSM 04.08: EMERGENCY SETUP message content

IEI	Information element	Type / Reference	Presence	Format	Length
	Call control	Protocol discriminator	M	V	1/2
	protocol discriminator	10.2			
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2
	Emergency setup message type	Message type 10.4	M	V	1
04	Bearer capability	Bearer capability 10.5.4.5	0	TLV	3-9

### 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.

### \*\*\*\*\*\*\* NEXT 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/GSM 04.08 and tables 10.5.102/GSM 04.08 to 10.5.115/GSM 04.08.

The bearer capability is a type 4 information element with a minimum length of 3 octets and a maximum length of 15 octets.

. 8	7	6	5	4	3	2	1		
+		Веа	arer ca	apabil:	ity IE	 [ 		octet	1
L.	Length of the bearer capability contents								2
0/1 ext	char	dio nnel rement	co- ding std	trans fer mode	tra	ormati ansfer abilit		octet	3
0/1	0	0	<del></del> 0		1				2
ext	co- ding	<del>sp:</del>			e <del>ch vei</del> ndicati			<del>-octet</del> -	<del>3a etc</del> ≛
0/1 ext	0 co- ding	CTM	0 spare		ech ver ndicati			octet	3a*
0/1	0	0	0	+				_	
ext	co- ding	spa	are		ech ver ndicati			octet	3b etc*
1	comp-			dupl.	confi	NIBE	R esta-		
ext	ress.	stru	cture	mode.	gur.	11 1 1 1 1	bli.	octet	4 *
0/1 ext	0 access	0 s id.	rat adapt		sic acces	gnalli ss pro	ng tocol	octet	5*
0/1 ext	Othe	r ITC	Othe: adap	r rate tion	0 0 0 Spare			octet	5a*
1 ext		Multi frame		LLI	Assig nor/e	Inb. neg	0 Spare	octet	5b*
0/1 ext	0 layer	1 1 id.	Us la	er info yer 1	ormatic protoco	on ol	sync/ async	octet	6*
0/1 ext	numb. stop bits	nego- tia- tion	numb. data bits		user 1	rate		octet	6a*
0/1 ext	inter	rmed. te	NIC on TX	NIC on RX	Pá	arity		octet	6b*
0/1 ext	connection element			modem type			octet	6c*	
0/1 ext	Other Fixe			ed network user rate			ite	octet	6d*
0/1 ext	Acceptable channel codings				Maximum number of traffic channels			octet	6e*
0/1 ext	+	UIMI			ted air interface r rate			octet	6f*
1   ext +	1 layer	0 2 id.			formati protoc		·	octet 	7*

Figure 10.5.88/GSM 04.08: Bearer capability information element

NOTE: The coding of the octets of the bearer capability information element is not conforming to TS ITU-T Recommendation Q.931.

### Table 10.5.102/GSM 04.08: Bearer capability information element

Radio channel requirement (octet 3), network to MS direction

Bits 6 and 7 are spare bits. The sending side (i.e. the network) shall set bit 7 to value 0 and bit 6 to value 1.

Radio channel requirement (octet 3) MS to network direction

When information transfer capability (octet 3) indicates other values than speech: Bits

#### 7 6

0 0 reserved

- 0 1 full rate support only MS
- 1 0 dual rate support MS/half rate preferred
- 1 1 dual rate support MS/full rate preferred

When information transfer capability (octet 3) indicates the value speech and no speech version indication is present in octet 3a etc.:

Bits

7 6

0 0 reserved

- 0 1 full rate support only MS/fullrate speech version 1 supported
  - 1 0 dual rate support MS/half rate speech version 1 preferred, full rate speech version 1 also supported
  - 1 1 dual rate support MS/full rate speech version 1 preferred, half rate speech version 1 also supported

When information transfer capability (octet 3) indicates the value speech and speech version indication(s) is(are) present in octet 3a etc.:

Bits

7 6

0 0 reserved

- 0 1 the mobile station supports at least full rate speech version 1 but does not support half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 0 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for half rate speech version 1 than for full rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 1 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for full rate speech version 1 than for half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.

Coding standard (octet 3)

Bit

5

0 GSM standardized coding as described below

1 reserved

(continued...)

Table 10.5.102/GSM 04.08: Bearer capability information element (continued)

```
Transfer mode (octet 3)
Bit
4
  circuit mode
0
  packet mode
Information transfer capability (octet 3)
Bits 3 2 1
000 speech
0 0 1 unrestricted digital information
0 1 0 3.1 kHz audio, ex PLMN
0 1 1 facsimile group 3
1 0 1 Other ITC (See Octet 5a)
1 1 1 reserved, to be used in the network.
   The meaning is: alternate speech/facsimile group 3 - starting with speech.
All other values are reserved
```

#### Table 10.5.103/GSM 04.08: Bearer capability information element

Octet(s) 3a etc. MS to network direction

Coding

Bit

octet used for extension of information transfer capability

octet used for other extension of octet 3

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:

CTM text telephony indication (octet 3a)

Bit

CTM text telephony is not supported

CTM text telephony is supported

In this version of the protocol, bit 6 in octet 3a shall be ignored by the network.

Bit 6 in octet(s) 3b etc. is spare.

Bits 5 in octet(s) 3a etc. is and 6 are spare.

Speech version indication (octet(s) 3a etc.)

Bits

4321

0 0 0 0 GSM full rate speech version 1

0 0 1 0 GSM full rate speech version 2

0 1 0 0GSM full rate speech version 3

0 0 0 1 GSM half rate speech version 1 0 1 0 1GSM half rate speech version 3

All other values have the meaning "speech version tbd" and shall be ignored when received.

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).

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.

Octet(s) 3a etc. network to MS direction

The octet(s) 3a etc. shall be ignored by the MS.

Table 10.5.104/GSM 04.08: Bearer capability information element

```
Compression (octet 4), network to MS direction:
Bit
0
         data compression not possible
         data compression possible
Compression (octet 4), MS to network direction:
Bit
0
         data compression not allowed
         data compression allowed
Structure (octet 4)
Bits
6 5
0 0 service data unit integrity
1 1 unstructured
All other values are reserved.
Duplex mode (octet 4)
Bit
0
  half duplex
   full duplex
Configuration (octet 4)
Bit
0 point-to-point
All other values are reserved.
NIRR (octet 4)
(Negotiation of Intermediate Rate Requested)
Bit
2
   No meaning is associated with this value.
   Data up to and including 4.8 kb/s, full rate, non-transparent, 6 kb/s radio
                                                                              interface rate is
requested.
Establishment (octet 4)
Bit
0
   demand
All other values are reserved
```

### Table 10.5.105/GSM 04.08: Bearer capability information element

Access identity (octet 5) Bits 76 0 0 octet identifier All other values are reserved Rate adaption (octet 5) 5 4 0 0 no rate adaption 0 1 V.110/X.30 rate adaptation 1 0 ITU-T X.31 flag stuffing 1 1 Other rate adaption (see octet 5a) Signalling access protocol (octet 5) Bits 3 2 1 0 0 1 I.440/450 0 1 0 X.21 0 1 1 X.28 - dedicated PAD, individual NUI 1 0 0 X.28 - dedicated PAD, universal NUI 1 0 1 X.28 - non dedicated PAD 110 X.32 All other values are reserved.

### Table 10.5.106/GSM 04.08: Bearer capability information element

Other ITC (octet 5a)
If the value "Other ITC" is not signalled in the field "ITC" then the contents of this field shall be ignored.

Bit
76
0 0 restricted digital information
All other values are reserved

Other rate adaption (octet 5a)
If the value " Other rate adaption" is not signalled in the field "Rate adaption" then the contents of this field shall be ignored.

Bit
54
0 0 V.120
All other values are reserved.

### Table 10.5.107/GSM 04.08: Bearer capability information element

Rate adaption header/no header (octet 5b) Bit 0 Rate adaption header not included Rate adaption header included Multiple frame establishment support in data link (octet 5b) Bit 6 Multiple frame establishment not supported, only UI frames allowed 0 Multiple frame establishment supported Mode of operation (octet 5b) Bit 5 0 Bit transparent mode of operation Protocol sensitive mode of operation Logical link identifier negotiation (octet 5b) Bit 4 0 Default, LLI=256 only Full protocol negotiation, (note: A connection over which protocol negotiation will be executed is indicated in bit 2 of octet 5b) Assignor/Assignee (octet 5b) Bit 3 Message originator is "default assignee" 0 Message originator is "assignor only" In band/Out of band negotiation (octet 5b) Bit 2 Negotiation is done in-band using logical link zero 0 Negotiation is done with USER INFORMATION messages on a temporary signalling connection Bit 1 is spare and set to the value "0"

### Table 10.5.108/GSM 04.08: Bearer capability information element

```
Layer 1 identity (octet 6)
Bits
7 6
0 1 octet identifier

All other values are reserved

User information layer 1 protocol (octet 6)
Bits
5 4 3 2
0 0 0 0 default layer 1 protocol

All other values reserved.

Synchronous/asynchronous (octet 6)
Bit
1
0 synchronous
1 asynchronous
```

### Table 10.5.109/GSM 04.08: Bearer capability information element

```
Number of Stop Bits (octet 6a)
Bit
   1 bit (This value is also used in the case of synchronous mode)
0
   2 bits
Negotiation (octet 6a)
Bit
0 in-band negotiation not possible
NOTE: See Rec. V.110 and X.30
All other values are reserved
Number of data bits excluding parity bit if present (octet 6a)
Bit
5
  8 bits (this value is also used in the case of bit oriented protocols)
User rate (octet 6a)
Bits
4321
0 0 0 10.3 kbit/s Recommendation X.1 and V.110
0 0 1 01.2 kbit/s Recommendation X.1 and V.110
0 0 1 12.4 kbit/s Recommendation X.1 and V.110
0 1 0 04.8 kbit/s Recommendation X.1 and V.110
0 1 0 19.6 kbit/s Recommendation X.1 and V.110
0 1 1 012.0 kbit/s transparent (non compliance with X.1 and V.110)
0 1 1 11.2 kbit/s/75 bit/s Recommendation V.23, (asymmetric) X.1,V.110.
All other values are reserved.
For facsimile group 3 calls the user rate indicates the first and maximum speed the mobile station
is using.
```

## Table 10.5.110/GSM 04.08: Bearer capability information element

Octet 6b for V.110/X.30 rate adaptation Intermediate rate (octet 6b) Bits 7 6 0 0 reserved 0 1 reserved 1 0 8 kbit/s 1 1 16 kbit/s Network independent clock (NIC) on transmission (Tx) (octet 6b) (See Rec. V.110 and X.30) Bit 5 does not require to send data with network independent clock 0 requires to send data with network independent clock Network independent clock (NIC) on reception (Rx) (octet 6b) (See Rec. V.110 and X.30) Bit 0 cannot accept data with network independent clock (i.e. sender does not support this optional procedure) 1 can accept data with network independent clock (i.e. sender does support this optional procedure) Parity information (octet 6b) Bits 3 2 1 000 odd 010 even 011 none 100 forced to 0 1 0 1 forced to 1 All other values are reserved.

### Table 10.5.111/GSM 04.08: Bearer capability information element

```
Connection element (octet 6c)
Bit
76
0 0 transparent
0 1 non transparent (RLP)
1 0 both, transparent preferred
1 1 both, non transparent preferred
The requesting end (e.g. the one sending the SETUP message) should use the 4 values
depending on its capabilities to support the different modes. The answering party shall only use
the codings 00 or 01, based on its own capabilities and the proposed choice if any. If both MS and
network support both transparent and non transparent, priority should be given to the MS
preference.
Modem type (octet 6c)
Bits
54321
00000 none
00001 V.21
00010 V.22
0 0 0 1 1 V.22 bis
00100 V.23
0 0 1 0 1 V.26 ter
00110 V.32
0 0 1 1 1 modem for undefined interface
0 1 0 0 0 autobauding type 1
All other values are reserved.
```

### Table 10.5.112/GSM 04.08: Bearer capability information element

```
Other modem type (octet 6d)
Bits
76
0 0 no other modem type specified in this field
1 0
       V.34
All other values are reserved.
Fixed network user rate (octet 6d)
Bit
54321
0 0 0 0 0 Fixed network user rate not applicable/No meaning is associated
       with this value.
0 0 0 0 1 9.6 kbit/s Recommendation X.1 and V.110
0 0 0 1 0 14.4 kbit/s Recommendation X.1 and V.110
0 0 0 1 1 19.2 kbit/s Recommendation X.1 and V.110
0 0 1 0 0 28.8 kbit/s Recommendation X.1 and V.110
0 0 1 0 1 38.4 kbit/s Recommendation X.1 and V.110
0 0 1 1 0 48.0 kbit/s Recommendation X.1 and V.110(synch)
0 0 1 1 1 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent
0 1 0 0 0 64.0 kbit/s bit transparent
All other values are reserved.
```

Table 10.5.113/GSM 04.08: Bearer capability information element

```
Acceptable channel codings (octet 6e), mobile station to network direction:
Bit
   TCH/F14.4 not acceptable
0
   TCH/F14.4 acceptable
Bit
6
0 Spare
Bit
5
0
  TCH/F9.6 not acceptable
   TCH/F9.6 acceptable
Bit
0
   TCH/F4.8 not acceptable
   TCH/F4.8 acceptable
Acceptable channel codings (octet 6e), network to MS direction:
Bits 4 to 7 are spare and shall be set to "0".
Maximum number of traffic channels (octet 6e), MS to network direction:
Bits
3 2 1
000
       1 TCH
001
       2 TCH
010
       3 TCH
0 1 1
       4 TCH
100
       5 TCH
101
       6 TCH
110
       7 TCH
111
       8 TCH
Maximum number of traffic channels (octet 6e), network to MS direction:
Bits 1 to 3 are spare and shall be set to "0".
```

Table 10.5.114/GSM 04.08: Bearer capability information element

```
UIMI, User initiated modification indication (octet 6f),
765
0 0 0 User initiated modification not allowed/required
0 0 1 User initiated modification up to 1 TCH/F allowed/may be requested
0 1 0 User initiated modification up to 2 TCH/F allowed/may be requested
0 1 1 User initiated modification up to 3 TCH/F allowed/may be requested
1 0 0 User initiated modification up to 4 TCH/F allowed/may be requested
All other values shall be interpreted as "User initiated modification up to 4 TCH/F may be requested".
Wanted air interface user rate (octet 6f), MS to network direction:
4321
0 0 0 0 Air interface user rate not applicable/No meaning associated with this value
0 0 0 19.6 kbit/s
0 0 1 014.4 kbit/s
0 0 1 1 19.2 kbit/s
0 1 0 128.8 kbit/s
0 1 1 0 38.4 kbit/s
0 1 1 143.2 kbit/s
1000
          57.6 kbit/s
1 0 0 1 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 0 1 0 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 0 1 1 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 1 0 0 interpreted by the network as 38.4 kbit/s in this version of the protocol
All other values are reserved.
Wanted air interface user rate (octet 6f), network to MS direction:
Bits 1 to 4 are spare and shall be set to "0".
```

Table 10.5.115/GSM 04.08: Bearer capability information element

```
Layer 2 identity (octet 7)
Bits
7 6
1 0 octet identifier

All other values are reserved

User information layer 2 protocol (octet 7)

Bits
5 4 3 2 1
0 0 1 1 0 recommendation X.25, link level
0 1 0 0 0 ISO 6429, codeset 0 (DC1/DC3)
0 1 0 0 1 reserved: was allocated but never used in earlier phases of the protocol
0 1 0 1 0 videotex profile 1
0 1 1 0 0 COPnoFICt (Character oriented Protocol with no Flow Control mechanism)
0 1 1 0 1 X.75 layer 2 modified (CAPI)

All other values are reserved.
```

### 10.5.4.5.1 Static conditions for the bearer capability IE contents

If the information transfer capability field (octet 3) indicates "speech", octets 4, 5, 5a, 5b, 6, 6a, 6b, 6c, 6d, 6e, 6f and 7 shall not be included.

If the information transfer capability field (octet 3) indicates "speech", octet 3a etc. shall be included only if the mobile station supports <u>CTM text telephony or if it supports</u> at least one speech version other than:

- GSM full rate speech version 1; or
- GSM half rate speech version 1.

If the information transfer capability field (octet 3) indicates a value different from "speech", octets 4, 5, 6, 6a, 6b, and 6c shall be included, octets 6d, 6e and 6f are optional. In the network to MS direction in case octet 6d is included, octets 6e and 6f may be included. In the MS to network direction in case octet 6d is included octet 6e shall also be included and 6f may be included.

If the information transfer capability field (octet 3) indicates "facsimile group 3", the modem type field (octet 6c) shall indicate "none".

If the information transfer capability field (octet 3) indicates "other ITC" or the rate adaption field (octet 5) indicates "other rate adaption", octet 5a shall be included.

If the rate adaption field (octet 5) indicates "other rate adaption" and the other rate adaption field (octet 5a) indicates "V.120", octet 5b shall be included.

The modem type field (octet 6c) shall not indicate "autobauding type 1" unless the connection element field (octet 6c) indicates "non transparent".

### 3GPP TSG-CN1 Meeting #25 Helsinki, Finland, 29 July – 2 August

### Tdoc N1-021861

(rev of Tdoc N1-021844)

		CHA	NGE F	REQU	JEST	•		CR-Form-v7	
*	04.08	CR A11	<b>21</b>	rev	<b>1</b> *	Current vers	6.15.0	<b></b> #	
For <u>HELP</u> on u	sing this fo	orm, see botto	m of this pa	age or lo	ok at th	e pop-up text	over the 光 syr	mbols.	
Proposed change affects: UICC apps# ME X Radio Access Network Core Network									
Title: #	Support	of GTT (CTM							
Source: #	Ericssor	ı							
Work item code: ₩	GTT					Date: ♯	30/07/2002		
Category: 第	F (cc A (cc B (ac C (fu D (ec Detailed e	f the following or prection) presponds to a ddition of featurn nctional modifical ditorial modifical explanations of the an 3GPP TR 21.9	correction ire), eation of feat tion) ne above ca	ture)		2	R97 the following relations (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)		
Reason for change	: # TS(	GS#16 agreed	that suppo	ort of GT	T should	d be made or	otional for the te	ext	
rtoacon roi change		phony capabl						<i>-</i> /	
Summary of chang	This Em	arer Capability s indication sh ergency Setup 97 network do	IE ("CTM to all be incluso messages bes not sup	ded in the stoin to indicate to indicate the stoin discourted to the stoin dis	hony in le IE by ate its s	dication" in b the MS in the support of GT ill ignore the	es support for Git 6 of octet 3a) Call Confirme Call Confirme Contents of bit 6 Call contents of bit 6 Call contents of bit 6	ed and	
Consequences if not approved:	# CTI	M text telepho	ny indicatio	n suppo	rt missii	ng.			
Clauses affected:	₩ 9.3	2.2, 9.3.8.1, 1	0.5.4.5, 10	.5.4.5.1					
Other specs affected:	X X X X X X X X X X X X X X X X X X X	Other core Test specifi	cations	ons 8	H				
Other comments:	<b></b>								

### **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. 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.
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- 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.

### 9.3.2 Call confirmed

This message is sent by the called mobile station to confirm an incoming call request.

See table 9.56/GSM 04.08.

Message type: CALL CONFIRMED

Significance: local

Direction: mobile station to network

Table 9.56/GSM 04.08: CALL CONFIRMED message content

IEI	Information element	Type / Reference	Presence	Format	Length	
	Call control	Protocol discriminator	M	V	1/2	
	protocol discriminator	10.2				
	Transaction identifier	Transaction identifier	M	V	1/2	
		10.3.2				
	Call confirmed	Message type	M	V	1	
	message type	10.4				
D-	Repeat Indicator	Repeat Indicator	С	TV	1	
		10.5.4.22				
04	Bearer capability 1	Bearer capability	О	TLV	3-15	
		10.5.4.5				
04	Bearer capability 2	Bearer capability	О	TLV	3-15	
		10.5.4.5				
08	Cause	Cause	О	TLV	4-32	
		10.5.4.11				
15	CC Capabilities	Call Control Capabilities	0	TLV	3	
		10.5.4.5a				

### 9.3.2.1 Repeat indicator

The *repeat indicator* information element shall be included if *bearer capability 1* information element and *bearer capability 2* IE are both included in the message.

### 9.3.2.2 Bearer capability 1 and bearer capability 2

The *bearer capability 1* information element shall be included if and only if at least one of the following <u>six</u>five cases holds:

- the mobile station wishes another bearer capability than that given by the *bearer capability 1* information element of the incoming SETUP message;
- the bearer capability 1 information element is missing or not fully specified in the SETUP message;
- the *bearer capability 1* information element received in the SETUP message is accepted and the "radio channel requirement" of the mobile station is other than "full rate support only mobile station";

- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports CTM text telephony;
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports other speech versions than GSM version 1;
- the *bearer capability 1* information element received in the SETUP message included the "fixed network user rate" parameter.

When the *bearer capability 1* information element is followed by the *bearer capability 2* IE in the SETUP, the above rules apply to both *bearer capability 1* IE and bearer capability 2 IE. Except those cases identified in GSM 07.01, if either *bearer capability* needs to be included, both shall be included.

Furthermore, both *bearer capability* information elements may be present if the mobile station wishes to reverse the order of occurrence of the *bearer capability* information elements (which is referred to in the *repeat indicator* information element, see section 10.5.4.22) in cases identified in GSM 07.01.

### \*\*\*\*\*\* 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/GSM 04.08.

Message type: EMERGENCY SETUP

Significance: global

Direction: mobile station to network

Table 9.62/GSM 04.08: EMERGENCY SETUP message content

IEI	Information element	Type / Reference	Presence	Format	Length	
	Call control	Protocol discriminator	M	V	1/2	
	protocol discriminator	10.2				
	Transaction identifier	Transaction identifier	M	V	1/2	
		10.3.2				
	Emergency setup	Message type	M	V	1	
	message type	10.4				
04	Bearer capability	Bearer capability	0	TLV	3-9	
		10.5.4.5				

### 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.

## \*\*\*\*\*\* NEXT 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  $10.5.88/GSM\ 04.08$  and tables  $10.5.102/GSM\ 04.08$  to  $10.5.115/GSM\ 04.08$ .

The bearer capability is a type 4 information element with a minimum length of 3 octets and a maximum length of 15 octets.

4-	8	7	6	5	4	3	2	1	L	
ļ +	Bearer capability IEI								octet	1
	Length of the bearer capability contents								octet	2
	 0/1 ext	char	dio nnel rement	co- ding std	trans fer mode	transfer			octet	3
+-	<del>0/1</del>	0	0	0					_	
$\pm$	<del>ext</del>	co- ding	sp:	are	spec	ech ver edicati	rsion On		<del>-octet (</del> -	<del>3a ete*</del>
+-	0 / 1			l o						
	0/1 ext	0 co-	CTM	0 spare	spe	ech ver	sion		octet	3a*
I		ding		-	ir	ndicati	on		_	
+-	0/1	0	0	0					_	
	ext	co-	spa	are		ech ver			octet	3b etc*
+		ding	+			ndicati			_	
	1 ext 	comp- ress.		cture	dupl. mode	confi gur.	NIRR	esta- bli.	octet	4 *
	0/1 ext	0 acces:	0 s id.	rat adapt		siq acces	gnalli: ss pro	ng tocol	octet	5*
	0/1 ext	Othe:	r ITC	Othe: adapt	r rate tion	0	0 Spare	0	octet	5a*
	1 ext		Multi frame	Mode	LLI	Assig nor/e	Inb. neg	0 Spare	octet	5b*
	 0/1 ext	   0  layer	1 1 id.			ormatic protoco		sync/ async	octet	6*
	 0/1 ext	numb. stop bits	nego- tia- tion	numb. data bits		user 1	rate		octet	6a*
	0/1 ext	inte:	rmed. te	NIC on TX	NIC on RX	Pá	arity		octet	6b*
	0/1 ext	connec	ction ment		modem type				octet	6c*
	 0/1 ext	+ Otl modem	 ner type	Fixed network user rate				octet	6d*	
	 0/1 ext	+	Accept chani codii	nel		Maximum number of traffic channels			octet	6e*
+	1 ext	+   	UIMI			ted air interface r rate			octet	6f*
+	 1 ext	1 layer	0 2 id.			formati protod			octet	7*

Figure 10.5.88/GSM 04.08: Bearer capability information element

NOTE: The coding of the octets of the bearer capability information element is not conforming to TS CCITT Q.931.

### Table 10.5.102/GSM 04.08: Bearer capability information element

Radio channel requirement (octet 3), network to MS direction

Bits 6 and 7 are spare bits. The sending side (i.e. the network) shall set bit 7 to value 0 and bit 6 to value 1.

Radio channel requirement (octet 3) MS to network direction

When information transfer capability (octet 3) indicates other values than speech: Bits

#### 7 6

0 0 reserved

- 0 1 full rate support only MS
- 1 0 dual rate support MS/half rate preferred
- 1 1 dual rate support MS/full rate preferred

When information transfer capability (octet 3) indicates the value speech and no speech version indication is present in octet 3a etc.:

Bits

7 6

- 0 0 reserved
- 0 1 full rate support only MS/fullrate speech version 1 supported
  - 1 0 dual rate support MS/half rate speech version 1 preferred, full rate speech version 1 also supported
  - 1 1 dual rate support MS/full rate speech version 1 preferred, half rate speech version 1 also supported

When information transfer capability (octet 3) indicates the value speech and speech version indication(s) is(are) present in octet 3a etc.:

Bits

7 6

### 0 0 reserved

- 0 1 the mobile station supports at least full rate speech version 1 but does not support half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 0 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for half rate speech version 1 than for full rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 1 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for full rate speech version 1 than for half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.

Coding standard (octet 3)

Bit

5

0 GSM standardized coding as described below

1 reserved

(continued...)

Table 10.5.102/GSM 04.08: Bearer capability information element (continued)

```
Transfer mode (octet 3)
Bit
4
  circuit mode
0
  packet mode
Information transfer capability (octet 3)
Bits 3 2 1
000 speech
0 0 1 unrestricted digital information
0 1 0 3.1 kHz audio, ex PLMN
0 1 1 facsimile group 3
1 0 1 Other ITC (See Octet 5a)
1 1 1 reserved, to be used in the network.
   The meaning is: alternate speech/facsimile group 3 - starting with speech.
All other values are reserved
```

### Table 10.5.103/GSM 04.08: Bearer capability information element

Octet(s) 3a etc. MS to network direction

Coding

#### Bit

7

0 octet used for extension of information transfer capability

octet used for other extension of octet 3

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:

CTM text telephony indication (octet 3a)

#### Bit

6

O CTM text telephony is not supported

1 CTM text telephony is supported

In this version of the protocol, bit 6 in octet 3a shall be ignored by the network.

Bit 6 in octet(s) 3b etc. is spare.

Bits 5 in octet(s) 3a etc. is and 6 are spare.

Speech version indication (octet(s) 3a etc.)

Bits

4321

0 0 0 0 GSM full rate speech version 1

0 0 1 0GSM full rate speech version 2

0 0 0 1 GSM half rate speech version 1

All other values have the meaning "speech version tbd" and shall be ignored when received.

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).

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.

Octet(s) 3a etc. network to MS direction

The octet(s) 3a shall be ignored by the MS.

Table 10.5.104/GSM 04.08: Bearer capability information element

```
Compression (octet 4), network to MS direction:
Bit
0
         data compression not possible
         data compression possible
Compression (octet 4), MS to network direction:
Bit
0
         data compression not allowed
         data compression allowed
Structure (octet 4)
Bits
6 5
0 0 service data unit integrity
1 1 unstructured
All other values are reserved.
Duplex mode (octet 4)
Bit
0
  half duplex
   full duplex
Configuration (octet 4)
Bit
0 point-to-point
All other values are reserved.
NIRR (octet 4)
(Negotiation of Intermediate Rate Requested)
Bit
2
   No meaning is associated with this value.
   Data up to and including 4.8 kb/s, full rate, non-transparent, 6 kb/s radio
                                                                              interface rate is
requested.
Establishment (octet 4)
Bit
0
   demand
All other values are reserved
```

Table 10.5.105/GSM 04.08: Bearer capability information element

Access identity (octet 5) Bits 76 0 0 octet identifier All other values are reserved Rate adaption (octet 5) 5 4 0 0 no rate adaption 0 1 V.110/X.30 rate adaptation 1 0 CCITT X.31 flag stuffing 1 1 Other rate adaption (see octet 5a) Signalling access protocol (octet 5) Bits 3 2 1 0 0 1 I.440/450 0 1 0 X.21 0 1 1 X.28 - dedicated PAD, individual NUI 1 0 0 X.28 - dedicated PAD, universal NUI 1 0 1 X.28 - non dedicated PAD 110 X.32 All other values are reserved.

### Table 10.5.106/GSM 04.08: Bearer capability information element

Other ITC (octet 5a)
If the value "Other ITC" is not signalled in the field "ITC" then the contents of this field shall be ignored.

Bit
7 6
0 0 restricted digital information

All other values are reserved

Other rate adaption (octet 5a)
If the value " Other rate adaption" is not signalled in the field "Rate adaption" then the contents of this field shall be ignored.

Bit
5 4
0 0 V.120

All other values are reserved.

Table 10.5.107/GSM 04.08: Bearer capability information element

Rate adaption header/no header (octet 5b) Bit 0 Rate adaption header not included Rate adaption header included Multiple frame establishment support in data link (octet 5b) Bit 6 Multiple frame establishment not supported, only UI frames allowed 0 Multiple frame establishment supported Mode of operation (octet 5b) Bit 5 0 Bit transparent mode of operation Protocol sensitive mode of operation Logical link identifier negotiation (octet 5b) Bit 4 0 Default, LLI=256 only Full protocol negotiation, (note: A connection over which protocol negotiation will be executed is indicated in bit 2 of octet 5b) Assignor/Assignee (octet 5b) Bit 3 Message originator is "default assignee" 0 Message originator is "assignor only" In band/Out of band negotiation (octet 5b) Bit 2 Negotiation is done in-band using logical link zero 0 Negotiation is done with USER INFORMATION messages on a temporary signalling connection Bit 1 is spare and set to the value "0"

### Table 10.5.108/GSM 04.08: Bearer capability information element

```
Layer 1 identity (octet 6)
Bits
7 6
0 1 octet identifier

All other values are reserved

User information layer 1 protocol (octet 6)
Bits
5 4 3 2
0 0 0 0 default layer 1 protocol

All other values reserved.

Synchronous/asynchronous (octet 6)
Bit
1
0 synchronous
1 asynchronous
```

### Table 10.5.109/GSM 04.08: Bearer capability information element

```
Number of Stop Bits (octet 6a)
Bit
   1 bit (This value is also used in the case of synchronous mode)
0
   2 bits
Negotiation (octet 6a)
Bit
0 in-band negotiation not possible
NOTE: See Rec. V.110 and X.30
All other values are reserved
Number of data bits excluding parity bit if present (octet 6a)
Bit
5
  8 bits (this value is also used in the case of bit oriented protocols)
User rate (octet 6a)
Bits
4321
0 0 0 10.3 kbit/s Recommendation X.1 and V.110
0 0 1 01.2 kbit/s Recommendation X.1 and V.110
0 0 1 12.4 kbit/s Recommendation X.1 and V.110
0 1 0 04.8 kbit/s Recommendation X.1 and V.110
0 1 0 19.6 kbit/s Recommendation X.1 and V.110
0 1 1 012.0 kbit/s transparent (non compliance with X.1 and V.110)
0 1 1 11.2 kbit/s/75 bit/s Recommendation V.23, (asymmetric) X.1,V.110.
All other values are reserved.
For facsimile group 3 calls the user rate indicates the first and maximum speed the mobile station
is using.
```

Table 10.5.110/GSM 04.08: Bearer capability information element

Octet 6b for V.110/X.30 rate adaptation Intermediate rate (octet 6b) Bits 7 6 0 0 reserved 0 1 reserved 1 0 8 kbit/s 1 1 16 kbit/s Network independent clock (NIC) on transmission (Tx) (octet 6b) (See Rec. V.110 and X.30) Bit 5 does not require to send data with network independent clock 0 requires to send data with network independent clock Network independent clock (NIC) on reception (Rx) (octet 6b) (See Rec. V.110 and X.30) Bit 0 cannot accept data with network independent clock (i.e. sender does not support this optional procedure) 1 can accept data with network independent clock (i.e. sender does support this optional procedure) Parity information (octet 6b) Bits 3 2 1 000 odd 010 even 011 none 100 forced to 0 1 0 1 forced to 1 All other values are reserved.

### Table 10.5.111/GSM 04.08: Bearer capability information element

```
Connection element (octet 6c)
Bit
76
0 0 transparent
0 1 non transparent (RLP)
1 0 both, transparent preferred
1 1 both, non transparent preferred
The requesting end (e.g. the one sending the SETUP message) should use the 4 values
depending on its capabilities to support the different modes. The answering party shall only use
the codings 00 or 01, based on its own capabilities and the proposed choice if any. If both MS and
network support both transparent and non transparent, priority should be given to the MS
preference.
Modem type (octet 6c)
Bits
54321
00000 none
00001 V.21
00010 V.22
0 0 0 1 1 V.22 bis
00100 V.23
0 0 1 0 1 V.26 ter
00110 V.32
0 0 1 1 1 modem for undefined interface
0 1 0 0 0 autobauding type 1
All other values are reserved.
```

### Table 10.5.112/GSM 04.08: Bearer capability information element

```
Other modem type (octet 6d)
Bits
76
0 0 no other modem type specified in this field
1 0
       V.34
All other values are reserved.
Fixed network user rate (octet 6d)
Bit
54321
0 0 0 0 0 Fixed network user rate not applicable/No meaning is associated
       with this value.
0 0 0 0 1 9.6 kbit/s Recommendation X.1 and V.110
0 0 0 1 0 14.4 kbit/s Recommendation X.1 and V.110
0 0 0 1 1 19.2 kbit/s Recommendation X.1 and V.110
0 0 1 0 0 28.8 kbit/s Recommendation X.1 and V.110
0 0 1 0 1 38.4 kbit/s Recommendation X.1 and V.110
0 0 1 1 0 48.0 kbit/s Recommendation X.1 and V.110(synch)
0 0 1 1 1 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent
0 1 0 0 0 64.0 kbit/s bit transparent
All other values are reserved.
```

Table 10.5.113/GSM 04.08: Bearer capability information element

```
Acceptable channel codings (octet 6e), mobile station to network direction:
Bit
   TCH/F14.4 not acceptable
0
   TCH/F14.4 acceptable
Bit
6
0 Spare
Bit
5
0
  TCH/F9.6 not acceptable
   TCH/F9.6 acceptable
Bit
0
   TCH/F4.8 not acceptable
   TCH/F4.8 acceptable
Acceptable channel codings (octet 6e), network to MS direction:
Bits 4 to 7 are spare and shall be set to "0".
Maximum number of traffic channels (octet 6e), MS to network direction:
Bits
3 2 1
000
       1 TCH
001
       2 TCH
010
       3 TCH
0 1 1
       4 TCH
100
       5 TCH
101
       6 TCH
110
       7 TCH
111
       8 TCH
Maximum number of traffic channels (octet 6e), network to MS direction:
Bits 1 to 3 are spare and shall be set to "0".
```

Table 10.5.114/GSM 04.08: Bearer capability information element

```
UIMI, User initiated modification indication (octet 6f),
765
0 0 0 User initiated modification not allowed/required
0 0 1 User initiated modification up to 1 TCH/F allowed/may be requested
0 1 0 User initiated modification up to 2 TCH/F allowed/may be requested
0 1 1 User initiated modification up to 3 TCH/F allowed/may be requested
1 0 0 User initiated modification up to 4 TCH/F allowed/may be requested
All other values shall be interpreted as "User initiated modification up to 4 TCH/F may be requested".
Wanted air interface user rate (octet 6f), MS to network direction:
4321
0 0 0 0 Air interface user rate not applicable/No meaning associated with this value
0 0 0 19.6 kbit/s
0 0 1 014.4 kbit/s
0 0 1 1 19.2 kbit/s
0 1 0 128.8 kbit/s
0110
           38.4 kbit/s
0 1 1 143.2 kbit/s
1 0 0 057.6 kbit/s
1 0 0 1 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 0 1 0 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 0 1 1 interpreted by the network as 38.4 kbit/s in this version of the protocol
1 1 0 0 interpreted by the network as 38.4 kbit/s in this version of the protocol
All other values are reserved.
Wanted air interface user rate (octet 6f), network to MS direction:
Bits 1 to 4 are spare and shall be set to "0".
```

Table 10.5.115/GSM 04.08: Bearer capability information element

```
Layer 2 identity (octet 7)
Bits
7 6
1 0 octet identifier

All other values are reserved

User information layer 2 protocol (octet 7)

Bits
5 4 3 2 1
0 0 1 1 0 recommendation X.25, link level
0 1 0 0 0 ISO 6429, codeset 0 (DC1/DC3)
0 1 0 0 1 reserved: was allocated but never used in earlier phases of the protocol
0 1 0 1 0 videotex profile 1
0 1 1 0 0 COPnoFICt (Character oriented Protocol with no Flow Control mechanism)
0 1 1 0 1 X.75 layer 2 modified (CAPI)

All other values are reserved.
```

### 10.5.4.5.1 Static conditions for the bearer capability IE contents

If the information transfer capability field (octet 3) indicates "speech", octets 4, 5, 5a, 5b, 6, 6a, 6b, 6c, 6d, 6e, 6f and 7 shall not be included.

If the information transfer capability field (octet 3) indicates "speech", octet 3a etc. shall be included only if the mobile station supports <u>CTM text telephony or if it supports</u> at least one speech version other than:

- GSM full rate speech version 1; or
- GSM half rate speech version 1.

If the information transfer capability field (octet 3) indicates a value different from "speech", octets 4, 5, 6, 6a, 6b, and 6c shall be included, octets 6d, 6e, and 6f are optional. In the network to MS direction in case octet 6d is included, octet 6e and octet 6f may be included. In the MS to network direction in case octet 6d is included octet 6e shall also be included and 6f may be included.

If the information transfer capability field (octet 3) indicates "facsimile group 3", the modem type field (octet 6c) shall indicate "none".

If the information transfer capability field (octet 3) indicates "other ITC" or the rate adaption field (octet 5) indicates "other rate adaption", octet 5a shall be included.

If the rate adaption field (octet 5) indicates "other rate adaption" and the other rate adaption field (octet 5a) indicates "V.120", octet 5b shall be included.

The modem type field (octet 6c) shall not indicate "autobauding type 1" unless the connection element field (octet 6c) indicates "non transparent".

## 3GPP TSG-CN1 Meeting #25 Helsinki, Finland, 29 July – 2 August

## Tdoc N1-021862

(rev of Tdoc N1-021846)

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For <u><b>HELP</b></u> on u	sing t	his for	m, see	bottom of	this page or	look a	at the	pop-up text	over th	ne ₩ syr	mbols.
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Other specs affected:	¥	Y N X X X	Test	r core speci specification Specification	ns	ж					
Other comments:	ж										

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- 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.

## 9.3.2 Call confirmed

This message is sent by the called mobile station to confirm an incoming call request.

See table 9.56/3GPP TS 24.008.

Message type: CALL CONFIRMED

Significance: local

Direction: mobile station to network

Table 9.56/3GPP TS 24.008: CALL CONFIRMED message content

IEI	Information element	Type / Reference	Presence	Format	Length
	Call control protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2
	Call confirmed message type	Message type 10.4	M	V	1
D-	Repeat Indicator	Repeat Indicator 10.5.4.22	С	TV	1
04	Bearer capability 1	Bearer capability 10.5.4.5	0	TLV	3-16
04	Bearer capability 2	Bearer capability 10.5.4.5	0	TLV	3-16
08	Cause	Cause 10.5.4.11	0	TLV	4-32
15	CC Capabilities	Call Control Capabilities 10.5.4.5a	0	TLV	3
2D	Stream Identifier	Stream Identifier 10.5.4.28	0	TLV	3

## 9.3.2.1 Repeat indicator

The *repeat indicator* information element shall be included if *bearer capability 1* information element and *bearer capability 2* IE are both included in the message.

## 9.3.2.2 Bearer capability 1 and bearer capability 2

The *bearer capability 1* information element shall be included if and only if at least one of the following five six cases holds:

- the mobile station wishes another bearer capability than that given by the *bearer capability 1* information element of the incoming SETUP message;
- the bearer capability 1 information element is missing or not fully specified in the SETUP message;
- —the *bearer capability 1* information element received in the SETUP message is accepted and the "radio channel requirement" of the mobile station is other than "full rate support only mobile station";
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports CTM text telephony;
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports other speech versions than GSM version 1; Except in the case of UMTS speech where default UMTS AMR speech version shall be assumed.
- the *bearer capability 1* information element received in the SETUP message included the "fixed network user rate" parameter.

When the bearer capability 1 information element is followed by the bearer capability 2 IE in the SETUP, the above

rules apply to both *bearer capability* 1 IE and bearer capability 2 IE. Except those cases identified in 3GPP TS 27.001, if either *bearer capability* needs to be included, both shall be included.

Furthermore, both *bearer capability* information elements may be present if the mobile station wishes to reverse the order of occurrence of the *bearer capability* information elements (which is referred to in the *repeat indicator* information element, see clause 10.5.4.22) in cases identified in 3GPP TS 27.001.

If the mobile station wishes to indicate capability for an altenative call mode, which can be entered during the call through in-call modification, this is indicated by adding a *bearer capability information ele*ment (bearer capability) 2 element (see clause 5.3.6).

## 9.3.2.3 Cause

This information element is included if the mobile station is compatible but the user is busy.

## \*\*\*\*\*\*\* 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	M	V	1/2
	protocol discriminator	10.2			
	Transaction identifier	Transaction identifier	M	V	1/2
		10.3.2			
	Emergency setup	Message type	M	V	1
	message type	10.4			
04	Bearer capability	Bearer capability	0	TLV	3-9
		10.5.4.5			
2D	Stream Identifier	Stream Identifier	0	TLV	3
		10.5.4.28			

## 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 the default UMTS AMR speech version shall be assumed.

#### 9.3.8.2 Stream Identifier

This information element shall be included by the mobile station supporting multicall.

# \*\*\*\*\*\*\* NEXT 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.

8	7	6	5	4	3	2	1	1
			Beare	r capability	y IEI			octet 1
	L	ength of t	he bearer	capability	contents	i		octet 2
0/1		dio	co-	trans	ir	nformatio	n	
ext		nnel	ding	fer		transfer		octet 3
0/4		ement	std	mode	(	capability	<u>'</u>	-
<u>0/1</u>	<u>0</u>	OTM.	<u>0</u>					
<u>ext</u>	<u>co-</u> ding	<u>CTM</u>	<u>spare</u>	speech version indication				octet 3a*
0/1	<u>unig</u>	0	0		iriaice	ation		-
ext	CO-	<u>spare</u>	spare		speech	version		octet 3b etc*
<u> </u>	dina	<u> </u>	<u> </u>		indica			20101 02 010
0/1	0	0	0					1
ext	Co-	<del>sp:</del>	<del>are</del>		speech '	version		octet 3a etc*
	<del>ding</del>	•			indica	<del>ation</del>		
1	comp			dupl.	confi	NIRR	esta-	
ext	-ress.		cture	mode	gur.		bli.	octet 4*
0/1	0	0	-	ite		signalling		
ext	acce	ss id.	ada			ess proto		octet 5*
0/1	0.1	ITO		r rate	0	0	0	
ext		r ITC		otion	A ! -:	Spare	_	octet 5a*
1 ovt	Hdr/ noHdr	Multi	Mode	LLI	Assig nor/e	Inb.	0 Spore	octet 5b*
0/1	0	frame 1		User info		neg	Spare sync/	ociei sp
ext	-	1 id.		layer 1 p			async	octet 6*
0/1	numb.	nego-	numb.	layer r p	1010001		async	ocici o
ext	stop	tia-	data		user	rate		octet 6a*
0,	bits	tion	bits		4.00.			
0/1	inter	med.	NIC	NIC				1
ext	ra	ite	on TX	on RX		Parity		octet 6b*
0/1	conne	ection						
ext		nent		mo	odem type	Э		octet 6c*
0/1		her						
ext	mode	m type		Fixed ne	octet 6d*			
0/1			otable			num num fic chann		
ext			nnel		octet 6e*			
0/1		UIMI	ings	١٨٨	-			
ext		UIIVII		Wanted air interface user rate				octet 6f*
1		Acceptable			JOIGI OI			
ext		annel codi		Asymmetry 0 0				
J		extended				are	octet 6g*	
1	1	0		User information				, , , , , , ,
ext	layer	2 id.			r 2 protoc			octet 7*

Figure 10.5.88/3GPP TS 24.008 Bearer capability information element

NOTEs: The coding of the octets of the bearer capability information element is not conforming to ITU Q.931.

An MS shall encode the Bearer Capability infomation element according to GSM call control requirements also if it is requesting for a UMTS service.

For UTRAN access the following parameter is irrelevant, because multiple traffic channels (multislot) are not deployed [TS 23.034]. The parameter shall, however, be stored in MSC, and forwarded at handover:

- UIMI, User initiated modification indication (octet 6f, bits 5-7)

The following parameters are relevant in UMTS for non transparent data calls for deciding which RLP version to negotiate in order to avoid renegotiation of RLP version in case of inter-system handover, see 3GPP TS 24.022 [9]. They are otherwise irrelevant for specifying the UTRAN radio access bearer:

- Maximum number of traffic channels (octet 6e, bits 1-3)
- Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
- Acceptable Channel Codings extended (octet 6g, bits 5-7).

A mobile station not supporting GSM shall set the following parameters to the value "0":

- Maximum number of traffic channels (octet 6e, bits 1-3)
- Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
- UIMI, User initiated modification indication (octet 6f, bits 5-7)
- Acceptable Channel Codings extended (octet 6g, bits 5-7).

#### Table 10.5.102/3GPP TS 24.008: Bearer capability information element

Radio channel requirement (octet 3), network to MS direction In GSM, i.e. not applicable for UMTS data services.

Bits 6 and 7 are spare bits. The sending side (i.e. the network) shall set bit 7 to value 0 and bit 6 to value 1.

Radio channel requirement (octet 3) MS to network direction

When information transfer capability (octet 3) indicates other values than speech:

## Bits

7 6

- 00 reserved
- 0 1 full rate support only MS
- 1 0 dual rate support MS/half rate preferred
- 1 1 dual rate support MS/full rate preferred

When information transfer capability (octet 3) indicates the value speech and no speech version indication is present in octet 3a etc.:

#### Bits

76

- 0 0 reserved
- 0 1 full rate support only MS/fullrate speech version 1 supported
  - 1 0 dual rate support MS/half rate speech version 1 preferred, full rate speech version 1 also supported
  - 1 1 dual rate support MS/full rate speech version 1 preferred, half rate speech version 1 also supported

When information transfer capability (octet 3) indicates the value speech and speech version indication(s) is(are) present in octet 3a etc.:

# Bits **7 6**

0 0 reserved

- 0 1 the mobile station supports at least full rate speech version 1 but does not support half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 0 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for half rate speech version 1 than for full rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.

1 1 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for full rate speech version 1 than for half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.

(continued...)

## Table 10.5.102/3GPP TS 24.008: Bearer capability information element (continued)

```
Coding standard (octet 3)
Bit
5
0
   GSM standardized coding as described below
   reserved
Transfer mode (octet 3)
Bit
0
  circuit mode
  packet mode
Information transfer capability (octet 3)
Bits
3 2 1
000 speech
0 0 1 unrestricted digital information
0 1 0 3.1 kHz audio, ex PLMN
0 1 1 facsimile group 3
1 0 1 Other ITC (See Octet 5a)
1 1 1 reserved, to be used in the network.
   The meaning is: alternate speech/facsimile group 3 - starting with speech.
All other values are reserved
```

#### Table 10.5.103/3GPP TS 24.008 Bearer capability information element

Octet(s) 3a etc. MS to network direction

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 Acess.

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".

Coding

Bit

7

0 octet used for extension of information transfer capability

1 octet used for other extension of octet 3

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:

CTM text telephony indication (octet 3a)

Bit

6

0 CTM text telephony is not supported

1 CTM text telephony is supported

In this version of the protocol, bit 6 in octet 3a shall be ignored by the network.

Bit 6 in octet(s) 3b etc. is spare.

Bits 5 in octet(s) 3a etc. is and 6 are spare.

Speech version indication (octet(s) 3a etc.)

Bits

4321

0 0 0 0 GSM full rate speech version 1

0 0 1 0 GSM full rate speech version 2

0 1 0 0GSM full rate speech version 3

0 0 0 1 GSM half rate speech version 1

0 1 0 1GSM half rate speech version 3

1 1 1 1 no speech version supported for GSM radio access (note 1)

All other values have the meaning "speech version tbd" and shall be ignored when received.

NOTE 1: This value shall only be used by an MS supporting CTM text telephony, but not supporting GSM radio access.

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).

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.

Octet(s) 3a etc. network to MS direction

The octet(s) 3a etc. shall be ignored by the MS.

Table 10.5.104/3GPP TS 24.008: Bearer capability information element

```
Compression (octet 4), network to MS direction:
Bit
0
         data compression not possible
         data compression possible
Compression (octet 4), MS to network direction:
Bit
0
         data compression not allowed
         data compression allowed
Structure (octet 4)
Bits
6 5
0 0 service data unit integrity
1 1 unstructured
All other values are reserved.
Duplex mode (octet 4)
Bit
0
  half duplex
   full duplex
Configuration (octet 4)
Bit
0 point-to-point
All other values are reserved.
NIRR (octet 4)
(Negotiation of Intermediate Rate Requested)
In GSM, i.e. not applicable for UMTS data services.
Bit
2
   No meaning is associated with this value.
0
   Data up to and including 4.8 kb/s, full rate, non-transparent, 6 kb/s radio
                                                                              interface rate is
requested.
Establishment (octet 4)
Bit
0
   demand
All other values are reserved
```

#### Table 10.5.105/3GPP TS 24.008: Bearer capability information element

Access identity (octet 5) Bits 76 0 0 octet identifier All other values are reserved Rate adaption (octet 5) 5 4 0 0 no rate adaption 0 1 V.110, I.460/X.30 rate adaptation 1 0 ITU-T X.31 flag stuffing 1 1 Other rate adaption (see octet 5a) Signalling access protocol (octet 5) Bits 3 2 1 0 0 1 I.440/450 0 1 0 reserved: was allocated in earlier phases of the protocol 0 1 1 reserved: was allocated in earlier phases of the protocol 1 0 0 reserved: was allocated in earlier phases of the protocol. 1 0 1 reserved: was allocated in earlier phases of the protocol 110 X.32 All other values are reserved.

#### Table 10.5.106/3GPP TS 24.008: Bearer capability information element

Other ITC (octet 5a) If the value "Other ITC" is not signalled in the field "ITC" then the contents of this field shall be ignored. Bit 0 0 restricted digital information All other values are reserved Other rate adaption (octet 5a) If the value " Other rate adaption" is not signalled in the field "Rate adaption" then the contents of this field shall be ignored. In UMTS, PIAFS shall be considered. In GSM, call shall be rejected if PIAFS requested. Bit 5 4 0 0 V.120 H.223 & H.245 0 1 10 PIAFS All other values are reserved.

## Table 10.5.107/3GPP TS 24.008: Bearer capability information element

Rate adaption header/no header (octet 5b) Bit 0 Rate adaption header not included Rate adaption header included Multiple frame establishment support in data link (octet 5b) Bit 6 Multiple frame establishment not supported, only UI frames allowed 0 Multiple frame establishment supported Mode of operation (octet 5b) Bit 5 0 Bit transparent mode of operation Protocol sensitive mode of operation Logical link identifier negotiation (octet 5b) Bit 4 0 Default, LLI=256 only Full protocol negotiation, (note: A connection over which protocol negotiation will be executed is indicated in bit 2 of octet 5b) Assignor/Assignee (octet 5b) Bit 3 Message originator is "default assignee" 0 Message originator is "assignor only" In band/Out of band negotiation (octet 5b) Bit 2 Negotiation is done in-band using logical link zero 0 Negotiation is done with USER INFORMATION messages on a temporary signalling connection Bit 1 is spare and set to the value "0"

#### Table 10.5.108/3GPP TS 24.008: Bearer capability information element

```
Layer 1 identity (octet 6)
Bits
7 6
0 1 octet identifier

All other values are reserved

User information layer 1 protocol (octet 6)
Bits
5 4 3 2
0 0 0 0 default layer 1 protocol

All other values reserved.

Synchronous/asynchronous (octet 6)
Bit
1
0 synchronous
1 asynchronous
```

## Table 10.5.109/3GPP TS 24.008: Bearer capability information element

```
Number of Stop Bits (octet 6a)
Bit
   1 bit (This value is also used in the case of synchronous mode)
0
   2 bits
Negotiation (octet 6a)
Bit
0 in-band negotiation not possible
NOTE: See Rec. V.110 and X.30
All other values are reserved
Number of data bits excluding parity bit if present (octet 6a)
Bit
5
  8 bits (this value is also used in the case of bit oriented protocols)
User rate (octet 6a)
In GSM only.
Bits
4321
0001
          0.3 kbit/s Recommendation X.1 and V.110
          1.2 kbit/s Recommendation X.1 and V.110
0010
          2.4 kbit/s Recommendation X.1 and V.110
0011
          4.8 kbit/s Recommendation X.1 and V.110
0100
          9.6 kbit/s Recommendation X.1 and V.110
0101
0110
          12.0 kbit/s transparent (non compliance with X.1 and V.110)
0 1 1 1
          reserved: was allocated in earlier phases of the protocol.
All other values are reserved.
For facsimile group 3 calls the user rate indicates the first and maximum speed the mobile station
is using.
```

## Table 10.5.110/3GPP TS 24.008: Bearer capability information element

Octet 6b for V.110/X.30 rate adaptation Intermediate rate (octet 6b) In GSM only. Bits 76 0 0 reserved 0 1 reserved 1 0 8 kbit/s 1 1 16 kbit/s Network independent clock (NIC) on transmission (Tx) (octet 6b) (See Rec. V.110 and X.30). in GSM only. Bit 5 0 does not require to send data with network independent clock requires to send data with network independent clock Network independent clock (NIC) on reception (Rx) (octet 6b) (See Rec. V.110 and X.30) In GSM only. Bit 0 cannot accept data with network independent clock (i.e. sender does not support this optional procedure) 1 can accept data with network independent clock (i.e. sender does support this optional procedure) Parity information (octet 6b) Bits 3 2 1 0 0 0 odd 010 even 011 none 100 forced to 0 1 0 1 forced to 1 All other values are reserved.

## Table 10.5.111/3GPP TS 24.008: Bearer capability information element

Connection element (octet 6c) Bit 7 6 0 0 transparent 0 1 non transparent (RLP) 1 0 both, transparent preferred 1 1 both, non transparent preferred The requesting end (e.g. the one sending the SETUP message) should use the 4 values depending on its capabilities to support the different modes. The answering party shall only use the codings 00 or 01, based on its own capabilities and the proposed choice if any. If both MS and network support both transparent and non transparent, priority should be given to the MS preference. Modem type (octet 6c) Bits 54321 00000 none 0 0 0 0 1 V.21 (note 1) 0 0 0 1 0 V.22 (note 1) 0 0 0 1 1 V.22 bis (note 1) 0 0 1 0 0 reserved: was allocated in earlier phases of the protocol 0 0 1 0 1 V.26 ter (note 1) 00110 V.32 0 0 1 1 1 modem for undefined interface 0 1 0 0 0 autobauding type 1 All other values are reserved. Note 1: In GSM only.

#### Table 10.5.112/3GPP TS 24.008: Bearer capability information element

Other modem type (octet 6d) Bits 7 6 0 0 no other modem type specified in this field 1 0 V.34 All other values are reserved. Fixed network user rate (octet 6d) 54321 0 0 0 0 0 Fixed network user rate not applicable/No meaning is associated with this value. 0 0 0 0 1 9.6 kbit/s Recommendation X.1 and V.110 0 0 0 1 0 14.4 kbit/s Recommendation X.1 and V.110 0 0 0 1 1 19.2 kbit/s Recommendation X.1 and V.110 0 0 1 0 0 28.8 kbit/s Recommendation X.1 and V.110 0 0 1 0 1 38.4 kbit/s Recommendation X.1 and V.110 0 0 1 1 0 48.0 kbit/s Recommendation X.1 and V.110(synch) (note 1) 0 0 1 1 1 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent 0 1 0 0 0 64.0 kbit/s bit transparent 0 1 0 0 1 33.6 kbit/s bit transparent (note 2) 0 1 0 1 0 32.0 kbit/s Recommendation I.460 0 1 0 1 1 31.2 kbit/s Recommendation V.34 (note 2) The value 31.2 kbit/s Recommendation V.34 shall be used only by the network to inform the MS about FNUR modification due to negotiation between the modems in a 3.1 kHz multimedia call. All other values are reserved. Note 1: In GSM only. Note 2: In UMTS only

Table 10.5.113/3GPP TS 24.008: Bearer capability information element

```
Acceptable channel codings (octet 6e), mobile station to network direction:
Bit
7
0
  TCH/F14.4 not acceptable
  TCH/F14.4 acceptable
Bit
6
0 Spare
Bit
5
0
   TCH/F9.6 not acceptable
   TCH/F9.6 acceptable
Bit
0
   TCH/F4.8 not acceptable
   TCH/F4.8 acceptable
Acceptable channel codings (octet 6e), network to MS direction:
Bits 4 to 7 are spare and shall be set to "0".
Maximum number of traffic channels (octet 6e), MS to network direction:
Bits
3 2 1
000
       1 TCH
001
       2 TCH
       3 TCH
010
0 1 1
       4 TCH
       5 TCH
100
101
       6 TCH
110
       7 TCH
111
       8 TCH
Maximum number of traffic channels (octet 6e), network to MS direction:
Bits 1 to 3 are spare and shall be set to "0".
```

#### Table 10.5.114/3GPP TS 24.008: Bearer capability information element

```
UIMI, User initiated modification indication (octet 6f),
765
0 0 0 User initiated modification not allowed/required/applicable
0 0 1 User initiated modification up to 1 TCH/F allowed/may be requested
0 1 0 User initiated modification up to 2 TCH/F allowed/may be requested
0 1 1 User initiated modification up to 3 TCH/F allowed/may be requested
1 0 0 User initiated modification up to 4 TCH/F allowed/may be requested
All other values shall be interpreted as "User initiated modification up to 4 TCH/F may be requested".
User initiated modification indication is not applicable for transparent connection.
Wanted air interface user rate (octet 6f), MS to network direction:
Bits
4321
0 0 0 0 Air interface user rate not applicable/No meaning associated with this value
0001
          9.6 kbit/s
          14.4 kbit/s
0010
0011
          19.2 kbit/s
0101
          28.8 kbit/s
          38.4 kbit/s
0110
0111
          43.2 kbit/s
1000
          57.6 kbit/s
1001
          interpreted by the network as 38.4 kbit/s in this version of the protocol
          interpreted by the network as 38.4 kbit/s in this version of the protocol
1010
1011
          interpreted by the network as 38.4 kbit/s in this version of the protocol
1100
          interpreted by the network as 38.4 kbit/s in this version of the protocol
All other values are reserved.
Wanted air interface user rate (octet 6f), network to MS direction:
Bits 1 to 4 are spare and shall be set to "0".
```

#### Table 10.5.115/3GPP TS 24.008: Bearer capability information element

```
Layer 2 identity (octet 7)
Bits
7 6
1 0 octet identifier
All other values are reserved
User information layer 2 protocol (octet 7)
Bits
54321
0 0 1 1 0 recommendation X.25, link level
0 1 0 0 0 ISO 6429, codeset 0 (DC1/DC3)
0 1 0 0 1 reserved: was allocated but never used in earlier phases of the protocol
0 1 0 1 0 videotex profile 1
0 1 1 0 0 COPnoFICt (Character oriented Protocol with no Flow Control
       mechanism)
0 1 1 0 1 X.75 layer 2 modified (CAPI)
All other values are reserved.
```

Table 10.5.115a/3GPP TS 24.008: Bearer capability information element

Acceptable Channel Codings extended (octet 6g) mobile station to network direction: Bit 7 0 TCH/F28.8 not acceptable 1 TCH/F28.8 acceptable Bit 0 TCH/F32.0 not acceptable 1 TCH/F32.0 acceptable Bit 5 0 TCH/F43.2 not acceptable 1 TCH/F43.2 acceptable Channel Coding Asymmetry Indication Bits 43 0.0 Channel coding symmetry preferred Downlink biased channel coding asymmetry is preferred 10 0.1 Uplink biased channel coding asymmetry is preferred Unused, if received it shall be interpreted as "Channel coding symmetry preferred" 11 EDGE Channel Codings (octet 6g), network to MS direction: Bits 3 to 7 are spare and shall be set to "0". Bits 2 and 1 are spare.

#### 10.5.4.5.1 Static conditions for the bearer capability IE contents

For GSM, if the information transfer capability field (octet 3) indicates "speech", octets 4, 5, 5a, 5b, 6, 6a, 6b, 6c, 6d, 6e, 6f, 6g and 7 shall not be included.

If the information transfer capability field (octet 3) indicates "speech", octet 3a etc. shall be included only if the mobile station supports <u>CTM text telephony or if it supports</u> at least one speech version <u>for GSM radio access</u> other than:

- GSM full rate speech version 1; or
- GSM half rate speech version 1.

If the information transfer capability field (octet 3) indicates a value different from "speech", octets 4, 5, 6, 6a, 6b, and 6c shall be included, octets 6d, 6e, 6f and 6g are optional. In the network to MS direction in case octet 6d is included, octets 6e, 6f and 6g may be included. In the MS to network direction in case octet 6d is included octet 6e shall also be included and 6f and 6g may be included.

If the information transfer capability field (octet 3) indicates "facsimile group 3", the modem type field (octet 6c) shall indicate "none".

If the information transfer capability field (octet 3) indicates "other ITC" or the rate adaption field (octet 5) indicates "other rate adaption", octet 5a shall be included.

If the rate adaption field (octet 5) indicates "other rate adaption" and the other rate adaption field (octet 5a) indicates "V.120", octet 5b shall be included.

The modem type field (octet 6c) shall not indicate "autobauding type 1" unless the connection element field (octet 6c) indicates "non transparent".

## Tdoc N1-021863

(rev of Tdoc N1-021847)

CHANGE REQUEST									
ж <b>2</b>	4.008 CR 694	<b>πrev</b> 1 <sup>π</sup> 1	Current version: 4.7.0 #						
For <u>HELP</u> on using	g this form, see bottom of this	s page or look at the	pop-up text over the \ symbols.						
Proposed change affe	ects: UICC appsЖ	ME X Radio Ac	cess Network Core Network						
Title: 第 S	Support of GTT (CTM)								
Source: # E	ricsson								
Work item code:	STT		Date: 第 30/07/2002						
De	se <u>one</u> of the following categorie. <b>F</b> (correction) <b>A</b> (corresponds to a correction) <b>B</b> (addition of feature), <b>C</b> (functional modification of the properties of the correction) <b>D</b> (editorial modification)  Stailed explanations of the above found in 3GPP TR 21.900.	s: on in an earlier release) feature) categories can pport of GTT should	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)  be made optional for the text						
Summary of change:	Bearer Capability IE ("CT This indication shall be in Emergency Setup messa A Rel-4 network does not	M text telephony ind acluded in the IE by the ages to indicate its sut to support GTT and we	to indicate its support for GTT in the lication" in bit 6 of octet 3a).  he MS in the Call Confirmed and upport of GTT.  rill ignore the contents of bit 6 of s defined as spare in earlier						
Consequences if not approved:	CTM text telephony indic	ation support missing	g.						
Clauses affected:	¥ 9.3.2.2, 9.3.8.1, 10.5.4.5,	10.5.4.5.1							
Other specs affected:	Y N  X Other core specifications X O&M Specifications								
Other comments:	<b>H</b>								

## **How to create CRs using this form:**

Comprehensive information and tips about how to create CRs can be found at <a href="http://www.3gpp.org/specs/CR.htm">http://www.3gpp.org/specs/CR.htm</a>. 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 <a href="ftp://ftp.3gpp.org/specs/">ftp://ftp.3gpp.org/specs/</a> 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.

## 9.3.2 Call confirmed

This message is sent by the called mobile station to confirm an incoming call request.

See table 9.56/3GPP TS 24.008.

Message type: CALL CONFIRMED

Significance: local

Direction: mobile station to network

Table 9.56/3GPP TS 24.008: CALL CONFIRMED message content

IEI	Information element	Type/Reference	Presence	Format	Length
	Call control protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2
	Call confirmed message type	Message type 10.4	M	V	1
D-	Repeat Indicator	Repeat Indicator 10.5.4.22	С	TV	1
04	Bearer capability 1	Bearer capability 10.5.4.5	0	TLV	3-16
04	Bearer capability 2	Bearer capability 10.5.4.5	0	TLV	3-16
08	Cause	Cause 10.5.4.11	0	TLV	4-32
15	CC Capabilities	Call Control Capabilities 10.5.4.5a	0	TLV	3
2D	Stream Identifier	Stream Identifier 10.5.4.28	0	TLV	3
40	Supported Codecs	Supported Codec List 10.5.4.32	0	TLV	5-n

## 9.3.2.1 Repeat indicator

The *repeat indicator* information element shall be included if *bearer capability 1* information element and *bearer capability 2* IE are both included in the message.

## 9.3.2.2 Bearer capability 1 and bearer capability 2

The *bearer capability 1* information element shall be included if and only if at least one of the following <u>five six</u> cases holds:

- the mobile station wishes another bearer capability than that given by the *bearer capability 1* information element of the incoming SETUP message;
- the bearer capability 1 information element is missing or not fully specified in the SETUP message;
- \_\_\_\_\_\_the *bearer capability 1* information element received in the SETUP message is accepted and the "radio channel requirement" of the mobile station is other than "full rate support only mobile station";
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports CTM text telephony:
- the *bearer capability 1* information element received in the SETUP message indicates speech and is accepted and the mobile station supports other GSM codecs than GSM speech version 1;
- the *bearer capability 1* information element received in the SETUP message included the "fixed network user rate" parameter.

When the *bearer capability 1* information element is followed by the *bearer capability 2* IE in the SETUP, the above rules apply to both *bearer capability 1* IE and bearer capability 2 IE. Except those cases identified in 3GPP TS 27.001, if either *bearer capability* needs to be included, both shall be included.

Furthermore, both *bearer capability* information elements may be present if the mobile station wishes to reverse the order of occurrence of the *bearer capability* information elements (which is referred to in the *repeat indicator* information element, see subclause 10.5.4.22) in cases identified in 3GPP TS 27.001 [36].

If the mobile station wishes to indicate capability for an alternative call mode, which can be entered during the call through in-call modification, this is indicated by adding a *bearer capability information ele*ment (bearer capability) 2 element (see subclause 5.3.6).

#### 9.3.2.3 Cause

This information element is included if the mobile station is compatible but the user is busy.

## \*\*\*\*\* 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	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2
	Emergency setup message type	Message type 10.4	M	٧	1
04	Bearer capability	Bearer capability 10.5.4.5	0	TLV	3-9
2D	Stream Identifier	Stream Identifier 10.5.4.28	0	TLV	3
40	Supported Codecs	Supported Codec List 10.5.4.32	0	TLV	5-n
2E	Emergency category	Service category 10.5.4.33	0	TLV	3

## 9.3.8.1 Bearer capability

If the element is not included, the network shall by default assume speech and select the speech codec according to subclauses 5.2.1.2 and 5.2.1.11. 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.

## 9.3.8.2 Stream Identifier

This information element shall be included by the mobile station supporting multicall.

## \*\*\*\*\* NEXT 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.

8	7	6	5	4	3	2	1	1	
			Beare	r capability	/ IEI			octet 1	
	L	ength of t	he bearer	capability	contents	<b>i</b>		octet 2	
0/1		oib	co- ding	trans	ir	nformatio	n		
ext		channel		fer		transfer		octet 3	
		ement	std	mode	(	capability	<u>'</u>	-	
<u>0/1</u>	<u>0</u>		<u>0</u>						
<u>ext</u>	<u>CO-</u>	<u>CTM</u>	<u>spare</u>	speech version indication			octet 3a*		
0/4	ding	0	0		indica	ation		-	
<u>0/1</u>	<u>0</u>	<u>0</u>	<u>0</u>		onoooh	version		actat 2h ata	
<u>ext</u>	<u>co-</u> ding	<u>spare</u>	<u>spare</u>		speech indica			octet 3b etc	
0/1	<del>unig</del>	0	0		inuica	allOH		-	
ext	<del>co-</del>		are		speech	version		octet 3a etc	
CAL	ding	эрі	ar <del>c</del>		indica			Ocici oa cic	
1	comp			dupl.	confi	NIRR	esta-	1	
ext	-ress.	struc	cture	mode	gur.	1411414	bli.	octet 4*	
0/1	0	0		te		signalling	-		
ext	acce	ss id.	_	otion		ess prote		octet 5*	
0/1				er rate 0 0 0					
ext	Othe	r ITC	adaj	otion		Spare		octet 5a*	
1	Hdr/	Multi	Mode	LLI	Assig	lnb.	0		
ext	noHdr	frame			nor/e	neg	Spare	octet 5b*	
0/1	0	1		User info			sync/		
ext	layer	1 id.		layer 1 p	rotocol		async	octet 6*	
0/1	numb.	nego-	numb.						
ext	stop	tia-	data		user	rate		octet 6a*	
	bits	tion	bits		ı			1	
0/1		med.	NIC	NIC		D ::		01 *	
ext		te	on TX	on RX		Parity		octet 6b*	
0/1		ection nent			adam tun	_		actat Ca*	
0/1		ner	modem type					octet 6c*	
ext		n type		Fixed network user rate					
0/1	model		otable	1 IXCU IIC			her of	octet 6d*	
ext			ptable Maximum number of nnel traffic channels					octet 6e*	
OAL			ings	23.01.00					
0/1		UIMI	Wanted air interface						
ext		<del>-</del>	user rate					octet 6f*	
1	A	Acceptable	Э		1				
ext		annel codi		Asymmetry 0 0					
		extended		Indica		Sp	are	octet 6g*	
1	1	0			informat				
ext	layer	2 id.		laye	r 2 proto	col		octet 7*	

Figure 10.5.88/3GPP TS 24.008 Bearer capability information element

- NOTE 1: The coding of the octets of the bearer capability information element is not conforming to ITU Q.931.
- NOTE 2: An MS shall encode the Bearer Capability infomation element according to GSM call control requirements also if it is requesting for a UMTS service.
- NOTE 3: For UTRAN access the following parameter is irrelevant, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. The parameter shall, however, be stored in MSC, and forwarded at handover:
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
- NOTE 4: The following parameters are relevant in UMTS for non transparent data calls for deciding which RLP version to negotiate in order to avoid renegotiation of RLP version in case of inter-system handover, see 3GPP TS 24.022 [9]. They are otherwise irrelevant for specifying the UTRAN radio access bearer: -
- NOTE 5: Maximum number of traffic channels (octet 6e, bits 1-3)
  - Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7).

NOTE 6: A mobile station not supporting GSM shall set the following parameters to the value "0":

- Maximum number of traffic channels (octet 6e, bits 1-3)
- Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
- UIMI, User initiated modification indication (octet 6f, bits 5-7)
- Acceptable Channel Codings extended (octet 6g, bits 5-7).

#### Table 10.5.102/3GPP TS 24.008: Bearer capability information element

Radio channel requirement (octet 3), network to MS direction In GSM, i.e. not applicable for UMTS data services.

Bits 6 and 7 are spare bits. The sending side (i.e. the network) shall set bit 7 to value 0 and bit 6 to value 1.

Radio channel requirement (octet 3) MS to network direction

When information transfer capability (octet 3) indicates other values than speech: Bits

#### 7 6

- 0 0 reserved
- 0 1 full rate support only MS
- 1 0 dual rate support MS/half rate preferred
- 1 1 dual rate support MS/full rate preferred

When information transfer capability (octet 3) indicates the value speech and no speech version indication is present in octet 3a etc.:

#### Bits

#### 76

- 0 0 reserved
- 0 1 full rate support only MS/fullrate speech version 1 supported
  - 1 0 dual rate support MS/half rate speech version 1 preferred, full rate speech version 1 also supported
  - 1 1 dual rate support MS/full rate speech version 1 preferred, half rate speech version 1 also supported

When information transfer capability (octet 3) indicates the value speech and speech version indication(s) is(are) present in octet 3a etc.:

#### Bits

# **7 6** 0 0 reserved

- 0 1 the mobile station supports at least full rate speech version 1 but does not support half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 0 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for half rate speech version 1 than for full rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.
- 1 1 The mobile station supports at least full rate speech version 1 and half rate speech version 1. The mobile station has a greater preference for full rate speech version 1 than for half rate speech version 1. The complete voice codec preference is specified in octet(s) 3a etc.

(continued...)

Table 10.5.102/3GPP TS 24.008: Bearer capability information element (continued)

```
Coding standard (octet 3)
Bit
5
  GSM standardized coding as described below
0
  reserved
Transfer mode (octet 3)
Bit
   circuit mode
0
   packet mode
Information transfer capability (octet 3)
Bits
3 2 1
000 speech
0 0 1 unrestricted digital information
0 1 0 3.1 kHz audio, ex PLMN
0 1 1 facsimile group 3
1 0 1 Other ITC (See Octet 5a)
1 1 1 reserved, to be used in the network.
   The meaning is: alternate speech/facsimile group 3 - starting with speech.
All other values are reserved
```

#### Table 10.5.103/3GPP TS 24.008 Bearer capability information element

Octet(s) 3a etc. MS to network direction

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 Acess.

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".

Coding

Bit

7

0 octet used for extension of information transfer capability

1 octet used for other extension of octet 3

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:

CTM text telephony indication (octet 3a)

Bit

6

O CTM text telephony is not supported

1 CTM text telephony is supported

In this version of the protocol, bit 6 in octet 3a shall be ignored by the network.

Bit 6 in octet(s) 3b etc. is spare.

Bits 5 in octet(s) 3a etc. isand 6 are spare.

Speech version indication (octet(s) 3a etc.)

Bits

4321

0 0 0 0 GSM full rate speech version 1

0 0 1 0 GSM full rate speech version 2

0 1 0 0GSM full rate speech version 3

0 0 0 1 GSM half rate speech version 1

0 1 0 1GSM half rate speech version 3

1 1 1 1 no speech version supported for GSM radio access (note 1)

All other values have the meaning "speech version tbd" and shall be ignored when received.

NOTE 1: This value shall only be used by an MS supporting CTM text telephony, but not supporting GSM radio access.

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).

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.

Octet(s) 3a etc. network to MS direction

The octet(s) 3a etc. shall be ignored by the MS.

Table 10.5.104/3GPP TS 24.008: Bearer capability information element

```
Compression (octet 4), network to MS direction:
Bit
0
         data compression not possible
         data compression possible
Compression (octet 4), MS to network direction:
Bit
0
         data compression not allowed
         data compression allowed
Structure (octet 4)
Bits
6 5
0 0 service data unit integrity
1 1 unstructured
All other values are reserved.
Duplex mode (octet 4)
Bit
0
  half duplex
   full duplex
Configuration (octet 4)
Bit
0 point-to-point
All other values are reserved.
NIRR (octet 4)
(Negotiation of Intermediate Rate Requested)
In GSM, i.e. not applicable for UMTS data services.
Bit
2
   No meaning is associated with this value.
0
   Data up to and including 4.8 kb/s, full rate, non-transparent, 6 kb/s radio
                                                                              interface rate is
requested.
Establishment (octet 4)
Bit
0
   demand
All other values are reserved
```

#### Table 10.5.105/3GPP TS 24.008: Bearer capability information element

Access identity (octet 5) Bits 76 0 0 octet identifier All other values are reserved Rate adaption (octet 5) 5 4 0 0 no rate adaption 0 1 V.110, I.460/X.30 rate adaptation 1 0 ITU-T X.31 flag stuffing 1 1 Other rate adaption (see octet 5a) Signalling access protocol (octet 5) 3 2 1 0 0 1 I.440/450 0 1 0 reserved: was allocated in earlier phases of the protocol 0 1 1 reserved: was allocated in earlier phases of the protocol 1 0 0 reserved: was allocated in earlier phases of the protocol. 1 0 1 reserved: was allocated in earlier phases of the protocol 1 1 0 reserved: was allocated in earlier phases of the protocol All other values are reserved.

#### Table 10.5.106/3GPP TS 24.008: Bearer capability information element

Other ITC (octet 5a) If the value "Other ITC" is not signalled in the field "ITC" then the contents of this field shall be ignored. Bit 0 0 restricted digital information All other values are reserved Other rate adaption (octet 5a) If the value " Other rate adaption" is not signalled in the field "Rate adaption" then the contents of this field shall be ignored. In UMTS, PIAFS shall be considered. In GSM, call shall be rejected if PIAFS requested. Bit 5 4 0 0 V.120 H.223 & H.245 0 1 10 PIAFS All other values are reserved.

## Table 10.5.107/3GPP TS 24.008: Bearer capability information element

Rate adaption header/no header (octet 5b) Bit 0 Rate adaption header not included Rate adaption header included Multiple frame establishment support in data link (octet 5b) Bit 6 Multiple frame establishment not supported, only UI frames allowed 0 Multiple frame establishment supported Mode of operation (octet 5b) Bit 5 0 Bit transparent mode of operation Protocol sensitive mode of operation Logical link identifier negotiation (octet 5b) Bit 4 0 Default, LLI=256 only Full protocol negotiation, (note: A connection over which protocol negotiation will be executed is indicated in bit 2 of octet 5b) Assignor/Assignee (octet 5b) Bit 3 Message originator is "default assignee" 0 Message originator is "assignor only" In band/Out of band negotiation (octet 5b) Bit 2 Negotiation is done in-band using logical link zero 0 Negotiation is done with USER INFORMATION messages on a temporary signalling connection Bit 1 is spare and set to the value "0"

#### Table 10.5.108/3GPP TS 24.008: Bearer capability information element

```
Layer 1 identity (octet 6)
Bits
7 6
0 1 octet identifier

All other values are reserved

User information layer 1 protocol (octet 6)
Bits
5 4 3 2
0 0 0 0 default layer 1 protocol

All other values reserved.

Synchronous/asynchronous (octet 6)
Bit
1
0 synchronous
1 asynchronous
```

## Table 10.5.109/3GPP TS 24.008: Bearer capability information element

```
Number of Stop Bits (octet 6a)
Bit
   1 bit (This value is also used in the case of synchronous mode)
0
   2 bits
Negotiation (octet 6a)
Bit
0 in-band negotiation not possible
NOTE: See Rec. V.110 and X.30
All other values are reserved
Number of data bits excluding parity bit if present (octet 6a)
Bit
5
  8 bits (this value is also used in the case of bit oriented protocols)
User rate (octet 6a)
In GSM only.
Bits
4321
0001
          0.3 kbit/s Recommendation X.1 and V.110
          1.2 kbit/s Recommendation X.1 and V.110
0010
          2.4 kbit/s Recommendation X.1 and V.110
0011
          4.8 kbit/s Recommendation X.1 and V.110
0100
          9.6 kbit/s Recommendation X.1 and V.110
0101
0110
          12.0 kbit/s transparent (non compliance with X.1 and V.110)
0 1 1 1
          reserved: was allocated in earlier phases of the protocol.
All other values are reserved.
For facsimile group 3 calls the user rate indicates the first and maximum speed the mobile station
is using.
```

## Table 10.5.110/3GPP TS 24.008: Bearer capability information element

Octet 6b for V.110/X.30 rate adaptation Intermediate rate (octet 6b) In GSM only. Bits 76 0 0 reserved 0 1 reserved 1 0 8 kbit/s 1 1 16 kbit/s Network independent clock (NIC) on transmission (Tx) (octet 6b) (See Rec. V.110 and X.30). in GSM only. Bit 5 0 does not require to send data with network independent clock requires to send data with network independent clock Network independent clock (NIC) on reception (Rx) (octet 6b) (See Rec. V.110 and X.30) In GSM only. Bit 0 cannot accept data with network independent clock (i.e. sender does not support this optional procedure) 1 can accept data with network independent clock (i.e. sender does support this optional procedure) Parity information (octet 6b) Bits 3 2 1 0 0 0 odd 010 even 011 none 100 forced to 0 1 0 1 forced to 1 All other values are reserved.

## Table 10.5.111/3GPP TS 24.008: Bearer capability information element

Connection element (octet 6c) Bit 7 6 0 0 transparent 0 1 non transparent (RLP) 1 0 both, transparent preferred 1 1 both, non transparent preferred The requesting end (e.g. the one sending the SETUP message) should use the 4 values depending on its capabilities to support the different modes. The answering party shall only use the codings 00 or 01, based on its own capabilities and the proposed choice if any. If both MS and network support both transparent and non transparent, priority should be given to the MS preference. Modem type (octet 6c) Bits 54321 00000 none 0 0 0 0 1 V.21 (note 1) 0 0 0 1 0 V.22 (note 1) 0 0 0 1 1 V.22 bis (note 1) 0 0 1 0 0 reserved: was allocated in earlier phases of the protocol 0 0 1 0 1 V.26 ter (note 1) 00110 V.32 0 0 1 1 1 modem for undefined interface 0 1 0 0 0 autobauding type 1 All other values are reserved. Note 1: In GSM only.

#### Table 10.5.112/3GPP TS 24.008: Bearer capability information element

Other modem type (octet 6d) Bits 7 6 0 0 no other modem type specified in this field 1 0 V.34 All other values are reserved. Fixed network user rate (octet 6d) 54321 0 0 0 0 0 Fixed network user rate not applicable/No meaning is associated with this value. 0 0 0 0 1 9.6 kbit/s Recommendation X.1 and V.110 0 0 0 1 0 14.4 kbit/s Recommendation X.1 and V.110 0 0 0 1 1 19.2 kbit/s Recommendation X.1 and V.110 0 0 1 0 0 28.8 kbit/s Recommendation X.1 and V.110 0 0 1 0 1 38.4 kbit/s Recommendation X.1 and V.110 0 0 1 1 0 48.0 kbit/s Recommendation X.1 and V.110(synch) (note 1) 0 0 1 1 1 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent 0 1 0 0 0 64.0 kbit/s bit transparent 0 1 0 0 1 33.6 kbit/s bit transparent (note 2) 0 1 0 1 0 32.0 kbit/s Recommendation I.460 0 1 0 1 1 31.2 kbit/s Recommendation V.34 (note 2) The value 31.2 kbit/s Recommendation V.34 shall be used only by the network to inform the MS about FNUR modification due to negotiation between the modems in a 3.1 kHz multimedia call. All other values are reserved. Note 1: In GSM only. Note 2: In UMTS only

Table 10.5.113/3GPP TS 24.008: Bearer capability information element

```
Acceptable channel codings (octet 6e), mobile station to network direction:
Bit
7
0
  TCH/F14.4 not acceptable
  TCH/F14.4 acceptable
Bit
6
0 Spare
Bit
5
0
   TCH/F9.6 not acceptable
   TCH/F9.6 acceptable
Bit
0
   TCH/F4.8 not acceptable
   TCH/F4.8 acceptable
Acceptable channel codings (octet 6e), network to MS direction:
Bits 4 to 7 are spare and shall be set to "0".
Maximum number of traffic channels (octet 6e), MS to network direction:
Bits
3 2 1
000
       1 TCH
001
       2 TCH
       3 TCH
010
0 1 1
       4 TCH
       5 TCH
100
101
       6 TCH
110
       7 TCH
111
       8 TCH
Maximum number of traffic channels (octet 6e), network to MS direction:
Bits 1 to 3 are spare and shall be set to "0".
```

#### Table 10.5.114/3GPP TS 24.008: Bearer capability information element

UIMI, User initiated modification indication (octet 6f), 765 0 0 0 User initiated modification not allowed/required/applicable 0 0 1 User initiated modification up to 1 TCH/F allowed/may be requested 0 1 0 User initiated modification up to 2 TCH/F allowed/may be requested 0 1 1 User initiated modification up to 3 TCH/F allowed/may be requested 1 0 0 User initiated modification up to 4 TCH/F allowed/may be requested All other values shall be interpreted as "User initiated modification up to 4 TCH/F may be requested". User initiated modification indication is not applicable for transparent connection. Wanted air interface user rate (octet 6f), MS to network direction: Bits 4321 0 0 0 Air interface user rate not applicable/No meaning associated with this value 0001 9.6 kbit/s 14.4 kbit/s 0010 0011 19.2 kbit/s 0101 28.8 kbit/s 0110 38.4 kbit/s 0111 43.2 kbit/s 1000 57.6 kbit/s 1001 interpreted by the network as 38.4 kbit/s in this version of the protocol interpreted by the network as 38.4 kbit/s in this version of the protocol 1010 interpreted by the network as 38.4 kbit/s in this version of the protocol 1011 1100 interpreted by the network as 38.4 kbit/s in this version of the protocol All other values are reserved. Wanted air interface user rate (octet 6f), network to MS direction: Bits 1 to 4 are spare and shall be set to "0".

#### Table 10.5.115/3GPP TS 24.008: Bearer capability information element

```
Layer 2 identity (octet 7)
Bits
7 6
1 0 octet identifier
All other values are reserved
User information layer 2 protocol (octet 7)
Bits
54321
0 0 1 1 0 reserved: was allocated in earlier phases of the protocol
0 1 0 0 0 ISO 6429, codeset 0 (DC1/DC3)
0 1 0 0 1 reserved: was allocated but never used in earlier phases of the protocol
0 1 0 1 0 videotex profile 1
0 1 1 0 0 COPnoFICt (Character oriented Protocol with no Flow Control
       mechanism)
0 1 1 0 1 reserved: was allocated in earlier phases of the protocol
All other values are reserved.
```

#### Table 10.5.115a/3GPP TS 24.008: Bearer capability information element

```
Acceptable Channel Codings extended (octet 6g) mobile station to network direction:
Bit
7
0 TCH/F28.8 not acceptable
1 TCH/F28.8 acceptable
Bit
0 TCH/F32.0 not acceptable
1 TCH/F32.0 acceptable
Bit
0 TCH/F43.2 not acceptable
1 TCH/F43.2 acceptable
Channel Coding Asymmetry Indication
Bits
43
00
       Channel coding symmetry preferred
      Downlink biased channel coding asymmetry is preferred
10
      Uplink biased channel coding asymmetry is preferred
0 1
      Unused, if received it shall be interpreted as "Channel coding symmetry preferred"
11
EDGE Channel Codings (octet 6g), network to MS direction:
Bits 3 to 7 are spare and shall be set to "0".
Bits 2 and 1 are spare.
```

## 10.5.4.5.1 Static conditions for the bearer capability IE contents

For GSM, if the information transfer capability field (octet 3) indicates "speech", octets 4, 5, 5a, 5b, 6, 6a, 6b, 6c, 6d, 6e, 6f, 6g and 7 shall not be included.

If the information transfer capability field (octet 3) indicates "speech", octet 3a etc. shall be included only if the mobile station supports <u>CTM</u> text telephony or if it supports at least one speech version for <u>GSM</u> radio access other than:

- GSM full rate speech version 1; or
- GSM half rate speech version 1.

If the information transfer capability field (octet 3) indicates a value different from "speech", octets 4, 5, 6, 6a, 6b, and 6c shall be included, octets 6d, 6e, 6f and 6g are optional. In the network to MS direction in case octet 6d is included, octets 6e, 6f and 6g may be included. In the MS to network direction in case octet 6d is included octet 6e shall also be included and 6f and 6g may be included.

If the information transfer capability field (octet 3) indicates "facsimile group 3", the modem type field (octet 6c) shall indicate "none".

If the information transfer capability field (octet 3) indicates "other ITC" or the rate adaption field (octet 5) indicates "other rate adaption", octet 5a shall be included.

If the rate adaption field (octet 5) indicates "other rate adaption" and the other rate adaption field (octet 5a) indicates "V.120", octet 5b shall be included.

The modem type field (octet 6c) shall not indicate "autobauding type 1" unless the connection element field (octet 6c) indicates "non transparent".