# 3GPP TSG CN Plenary Meeting #20 4<sup>th</sup> - 6<sup>th</sup> June 2003. HÄMEENLINNA, Finland.

NP-030269

Source: TSG CN WG 1

Title: CRs to R99 (with mirror CRs) on Work Item TEI towards 24.008,-

pack 1

Agenda item: 7.11

**Document for: APPROVAL** 

### **Introduction:**

This document contains 8 CRs, R99 to Work Item "TEI", that have been agreed by TSG CN WG1, and are forwarded to TSG CN Plenary meeting #20 for approval.

Spec	CR	Rev	Cat	Phase	Subject	Version- Current	Version -New	Meeting -2nd- Level	Doc-2nd- Level
24.008	751	1	F	R99	Combined RAU successful for GPRS only, missing GMM cause IE	3.15.0	3.16.0	N1-30	N1-030664
24.008	752	1	Α	Rel-4	Combined RAU successful for GPRS only, missing GMM cause IE(corresponding change to Rel-5 was part of N1-030216, CR 24.008-741 rev1, work item TEI5)	4.10.0	4.11.0	N1-30	N1-030665
24.008	753	3	F	R99	Bearer Capability IE	3.15.0	3.16.0	N1-29	N1-030554
24.008	754	3	Α	Rel-4	Bearer Capability IE	4.10.0	4.11.0	N1-29	N1-030555
24.008	755	3	Α	Rel-5	Bearer Capability IE	5.7.0	5.8.0	N1-29	N1-030556
24.008	756	3	Α	Rel-6	Bearer Capability IE	6.0.0	6.1.0	N1-29	N1-030557
24.008	761	1	F	R99	Provision of DNS server IPv6 address	3.15.0	3.16.0	N1-30	N1-030822
24.008	762	1	Α	Rel-4	Provision of DNS server IPv6 address	4.10.0	4.11.0	N1-30	N1-030823

# 3GPP TSG-CN1 Meeting #30

Tdoc N1-030664

San Diego, California, USA, 19 – 23 May 2003

(reprint of Tdoc N1-030392)

					$\mathbf{\cap}$			ST
G	7 <i>F</i>	λIV	U	ĸ	u	u	ᆮ	ЭI

*	2	24.008	CR <mark>751</mark>	жrev	<u>-1</u> *	Current ver	sion: <b>3.15.0</b> **
For <u>HELP</u> or	n usir	ng this for	m, see bottom of th	is page or	look at th	ne pop-up tex	t over the <b>%</b> symbols.
Proposed chang	ıe aff	fects:	JICC apps <b></b>	ME	Radio A	Access Netwo	ork Core Network X
. repectu chang				1412	rtadio 7	tooooo i totwo	ooro Hotwork 2
F							
Title:	<b></b> (	Combined	I RAU successful fo	or GPRS or	nly, missi	ng GMM cau	se IE
Source:	<b> 3</b>	Siemens /	4G				
Work item code:	· #	TEI				Date: 3	21/03/2003
Category:	<b></b> #	F				Release: #	R99
		lse <u>one</u> of t	he following categorie	es:		Use <u>one</u> or	f the following releases:
		F (corr	ection) esponds to a correcti	ion in an ear	lier releas	2 se) R96	(GSM Phase 2) (Release 1996)
			lition of feature),	on in an car	nor rolous	R97	(Release 1997)
		<b>C</b> (fund	ctional modification of	f feature)		R98	(Release 1998)
	_		orial modification)	o ootogorios		R99	(Release 1999)
			lanations of the abov 3GPP <u>TR 21.900</u> .	e categories	can	Rel-4 Rel-5	(Release 4) (Release 5)
	50	e iouila iii c	0011 <u>11( 21.500</u> .			Rel-6	(Release 6)
							· · · · · · · · · · · · · · · · · · ·
Reason for chan	ige:	GMM non-( (upda IE ha was s	I Cause IE "shall be GPRS services duri ate type = 'RA/LA u s to be included ge	e includede ing a comb pdating wit enerally if th S services	d if the IN ined GPF the IMSI at the combine combine in the IMSI at the IMSI a	MSI attach wa RS routing are ttach'). It need ned routing a	ified in 9.4.15.6 that the as not successful for ea updating procedure" ds to be clarified that the rea updating procedure odate type was 'RA/LA
Summary of cha	nge:	光 The c	condition for the inc	lusion of th	e GMM (	Cause IE in th	ne Routing Area Update
			pt message in 9.4.				
Consequences is	f	<b>ℋ</b> An ur	nclear specification	could resu	It in SGS	N implement	ations which do not
not approved:							sful for GPRS services
		only a	and the update type	e was 'RA/l	_A updati	ing' (without I	MSI attach). The result
							s according to R97-Rel-
					n abnorm	nal case (N1-	030216) and may not be
		able	t <mark>o receive PS servi</mark>	ces.			
Clauses affected	1:	<b>%</b> 9.4.1	5.6				
		YN					
Other specs		₩ X	Other core specific		æ		
affected:		X	Test specifications O&M Specification				
			Odivi Opecification	io			

Clauses affected:	ж 9.4.15.6
Other specs affected:	Y N  X Other core specifications X Test specifications O&M Specifications
Other comments:	** The corresponding change to Rel-5 and later was part of CR 24.008-741 rev1 (NP-030055 /N1-030216).

### How to create CRs using this form:

- 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.

# 9.4.15 Routing area update accept

This message is sent by the network to the MS to provide the MS with GPRS mobility management related data in response to a *routing area update request* message . See table 9.4.15/3GPP TS 24.008.

Message type: ROUTING AREA UPDATE ACCEPT

Significance: dual

Direction: network to MS

Table 9.4.15/3GPP TS 24.008: ROUTING AREA UPDATE ACCEPT message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	М	V	1/2
	Skip indicator	Skip indicator 10.3.1	М	V	1/2
	Routing area update accept message identity	Message type 10.4	М	V	1
	Force to standby	Force to standby 10.5.5.7	М	V	1/2
	Update result	Update result 10.5.5.17	M	V	1/2
	Periodic RA update timer	GPRS Timer 10.5.7.3	М	V	1
	Routing area identification	Routing area identification 10.5.5.15	М	V	6
19	P-TMSI signature	P-TMSI signature 10.5.5.8	0	TV	4
18	Allocated P-TMSI	Mobile identity 10.5.1.4	0	TLV	7
23	MS identity	Mobile identity 10.5.1.4	0	TLV	7-10
26	List of Receive N-PDU Numbers	Receive N-PDU Number list 10.5.5.11	0	TLV	4 - 19
17	Negotiated READY timer value	GPRS Timer 10.5.7.3	0	TV	2
25	GMM cause	GMM cause 10.5.5.14	0	TV	2
2A	T3302 value	GPRS Timer 2 10.5.7.4	0	TLV	3
8C	Cell Notification	Cell Notification 10.5.5.21	0	Т	1
4A	Equivalent PLMNs	PLMN List 10.5.1.13	0	TLV	5-17

# 9.4.15.1 P-TMSI signature

This IE may be included to assign an identity to the MS's GMM context.

## 9.4.15.2 Allocated P-TMSI

This IE may be included to assign a P-TMSI to an MS in case of a GPRS or combined routing area updating procedure.

# 9.4.15.3 MS identity

This IE may be included to assign or unassign a TMSI to a MS in case of a combined routing area updating procedure.

### 9.4.15.4 List of Receive N-PDU Numbers

This IE shall be included in case of an inter SGSN routing area updating, if there are PDP contexts that have been activated in acknowledged transfer mode.

# 9.4.15.5 Negotiated READY timer value

This IE may be included to indicate a value for the READY timer.

### 9.4.15.6 GMM cause

This IE shall be included if <u>a combined GPRS routing area updating procedure IMSI attach</u> was <del>not</del> successful for <del>non</del> GPRS services <u>onlyduring a combined GPRS routing area updating procedure</u>.

### 9.4.15.7 T3302 value

This IE may be included to indicate a value for the T3302 timer.

# 9.4.15.8 Cell Notification (GSM only)

In GSM, this IE shall be included if by the SGSN in order to indicate the ability to support the Cell Notification.

# 9.4.15.9 Equivalent PLMNs

The *Equivalent PLMNs* information element is included if the network wants to inform the mobile station of equivalent PLMNs.

Tdoc N1-030665

3GPP TSG-CN1 Meeting #30 San Diego, California, USA, 19 – 23 May 2003

(reprint of Tdoc N1-030393)

# **CHANGE REQUEST**

**	24	.008 CR <mark>752</mark>	#rev 1	<b>-</b> # (	Jurrent versi	on: 4.10.0 #
For <u>HELP</u> on t	using t	this form, see bottom of this	page or loc	ok at the	pop-up text	over the <b>%</b> symbols.
Proposed change	affec	ts: UICC apps#	ME F	Radio Aco	cess Networl	k Core Network
Title:	€ Coi	mbined RAU successful for	GPRS only	, missing	GMM cause	e IE
Source: #	€ Sie	emens AG				
   Work item code: ₩	€ TE	l			Date: %	24/03/2003
Category: अ	B A	one of the following categories				Rel-4 the following releases:
		<b>F</b> (correction)	•			(GSM Phase 2)
		A (corresponds to a correction	n in an earlie	r release)		(Release 1996)
		<ul><li>B (addition of feature),</li><li>C (functional modification of feature)</li></ul>	eature)			(Release 1997) (Release 1998)
		<b>D</b> (editorial modification)	<i>sature)</i>			(Release 1999)
	Deta	niled explanations of the above	categories ca	an	Rel-4	(Release 4)
	be fo	ound in 3GPP <u>TR 21.900</u> .				(Release 5) (Release 6)
					Rel-6	(Release 6)
Reason for chang	e: Ж	For the Routing Area Upd GMM Cause IE "shall be in non-GPRS services durin (update type = 'RA/LA update type = 'RA/LA update type = 'RA/LA update type general type as successful for GPRS updating', without IMSI at	ncludeded in a combined ating with leading with leading with leading if the services or	if the IMS ed GPRS IMSI atta combine	SI attach was Frouting area ch'). It needs d routing are	s not successful for a updating procedure s to be clarified that the ea updating procedure
Summary of chan	ge: #	The condition for the inclu Accept message in 9.4.15			use IE in the	e Routing Area Updat
Consequences if not approved:	Ж	An unclear specification of include the GMM Cause I only and the update type would be an undefined MS 4. A Rel-5 MS would treat able to receive PS service	E when the was 'RA/LA S behaviour this as an a	update v updating for imple	vas successi g' (without IM ementations	ful for GPRS services ISI attach). The resul according to R97-Re
Clauses affected:	92	9.4.15.6				
Giauses affected.	க	J. <del>1</del> . IJ.U				
		YN				
Other specs	æ	X Other core specifica	ations 3	€		
affected:		X Test specifications				
		X O&M Specifications				
Other comments:	ж	The corresponding chang (NP-030055 /N1-030216).		and later	was part of (	CR 24.008-741 rev1

### How to create CRs using this form:

- 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.

# 9.4.15 Routing area update accept

This message is sent by the network to the MS to provide the MS with GPRS mobility management related data in response to a *routing area update request* message. See table 9.4.15/3GPP TS 24.008.

Message type: ROUTING AREA UPDATE ACCEPT

Significance: dual

Direction: network to MS

Table 9.4.15/3GPP TS 24.008: ROUTING AREA UPDATE ACCEPT message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	М	V	1/2
	Skip indicator	Skip indicator 10.3.1	М	V	1/2
	Routing area update accept message identity	Message type 10.4	М	V	1
	Force to standby	Force to standby 10.5.5.7	М	V	1/2
	Update result	Update result 10.5.5.17	М	V	1/2
	Periodic RA update timer	GPRS Timer 10.5.7.3	М	V	1
	Routing area identification	Routing area identification 10.5.5.15	М	V	6
19	P-TMSI signature	P-TMSI signature 10.5.5.8	0	TV	4
18	Allocated P-TMSI	Mobile identity 10.5.1.4	0	TLV	7
23	MS identity	Mobile identity 10.5.1.4	0	TLV	7-10
26	List of Receive N-PDU Numbers	Receive N-PDU Number list 10.5.5.11	0	TLV	4 - 19
17	Negotiated READY timer value	GPRS Timer 10.5.7.3	0	TV	2
25	GMM cause	GMM cause 10.5.5.14	0	TV	2
2A	T3302 value	GPRS Timer 2 10.5.7.4	0	TLV	3
8C	Cell Notification	Cell Notification 10.5.5.21	0	Т	1
4A	Equivalent PLMNs	PLMN List 10.5.1.13	0	TLV	5-17
32	PDP context status	PDP context status 10.5.7.1	0	TLV	4
B-	Network feature support	Network feature support 10.5.5.23	0	TV	1

# 9.4.15.1 P-TMSI signature

This IE may be included to assign an identity to the MS's GMM context.

## 9.4.15.2 Allocated P-TMSI

This IE may be included to assign a P-TMSI to an MS in case of a GPRS or combined routing area updating procedure.

# 9.4.15.3 MS identity

This IE may be included to assign or unassign a TMSI to a MS in case of a combined routing area updating procedure.

### 9.4.15.4 List of Receive N-PDU Numbers

This IE shall be included in case of an inter SGSN routing area updating, if there are PDP contexts that have been activated in acknowledged transfer mode.

# 9.4.15.5 Negotiated READY timer value

This IE may be included to indicate a value for the READY timer.

### 9.4.15.6 GMM cause

This IE shall be included if <u>a combined GPRS routing area updating procedure IMSI attach</u> was <del>not</del> successful for <del>non</del> GPRS services <u>onlyduring a combined GPRS routing area updating procedure</u>.

### 9.4.15.7 T3302 value

This IE may be included to indicate a value for the T3302 timer.

# 9.4.15.8 Cell Notification (GSM only)

In GSM, this IE shall be included if by the SGSN in order to indicate the ability to support the Cell Notification.

# 9.4.15.9 Equivalent PLMNs

The *Equivalent PLMNs* information element is included if the network wants to inform the mobile station of equivalent PLMNs.

#### 9.4.15.10 PDP context status

This IE shall be included by the NW.

# 9.4.15.11 Network feature support

This IE may be included to inform the MS of the support of certain features. If this IE is not included then the respective features are not supported.

# 3GPP TSG-CN1 Meeting #29

# Tdoc N1-030554 Revision of N1-030489

Sopnia-Antip	olis, i	rrance	, 31 Marc	:n – 04	Apr		1003			
			CHANGE	. PEO		СТ			(	CR-Form-v7
			CHANGE	· I\LQ	OL,	<b>J</b> I				
*	24.0	008 CR	753	жrev	3	Ж	Current ve	rsion: 3.	15.0	#
For <u>HELP</u> on	usina th	is form se	ee hottom of thi	s nage or	look a	at the	e non-un tex	rt over the	 - ¥£ sv <i>r</i> r	phols
TOT TILLET OF	using un	13 101111, 36	se policin or this	s page or	IOON E	at tire	, ρορ-αρ το	u over une	z <del>oo</del> syiii	ibois.
Proposed change	e affects	: UICC	apps <b></b>	ME X	Rad	lio Ad	ccess Netwo	ork C	Core Net	twork X
Title:	<b>⊮</b> Bear	er Capabi	lity IE							
Source:	₩ Erics	son								
							_			
Work item code:	₩ TEI						Date: 8	<b>6</b> 04/04/	/2003	_
Category:	₩ <b>F</b>						Release: 8	€ R99		
	F A B C D	(correction (correspondadition of (functional (editorial)	nds to a correction of feature), of modification of modification)	on in an ear feature)		lease	2	of the follow (GSM Pi (Release (Release (Release (Release	hase 2) e 1996) e 1997) e 1998) e 1999)	ases:
			ions of the above TR 21.900.	- categories	o carr		Rel-4 Rel-5	(Release	,	

Reason for change: #

There is an internal contradiction in TS 24.008 section 10.5.4.5 between notes 2 and 5. Note 2 states that the BC IE shall be coded according to GSM call control even when requesting for a UMTS service. For some services e.g. 9.6 kbps, the parameters in octet 6e and followings can be omitted. Note 5 contradicts the note 2, saying that the extension octet to octet 6e shall always be included with zero value even if the terminal is UMTS only.

Rel-6

(Release 6)

There is a misalignment between TS 24.008 v3.14.0 and TS 27.001 v3.11.0 in sections 10.5.4.5.1, and Annex A, B.1.3.1.3, B.1.3.1.5, B.1.3.1.6 and B.1.3.2.3, respectively for the Acceptable Channel Codings (ACC) and Maximum Number of Traffic Channels (MaxNumTCH) parameters included in the octet 6e. These parameters are GSM specific fields which are only relevant in UMTS for non transparent data calls for deciding which RLP version to negociate in case of inter-system handover only like is described in the section 10.5.4.5 of TS 24.008. The TS 24,008 in section 10.5.4.5.1 mandates the MS to send in the BC IE the octet 6e in the MS to network direction whenever the octect 6d, which refers to Fixed Network User Rate (FNUR), is sent.

Furthermore, TS 24.008 in 10.5.4.5 states that an MS not supporting GSM shall set the parameters ACC and MaxNumTCH to the value "0". The value "0" to be set refers to the effective value to be inserted for a parameter into the bits for that parameter contained in the PLMN BC-IE. This "0" value for the ACC corresponds to a set of acceptable channel codings equal to "none" and for the MaxNumTCH corresponds to only 1 TCH. But in TS 27.001 the value "none" (set to the value "0") is not an option into the list of possible values given for the ACC neither Annex A and nor into the diagrams of sections B.1.3.1.3, B.1.3.1.5, B.1.3.1.6 and B1.3.2.3. For the MaxNumTCH 1 TCH is not a possible value in the diagrams of sections B.1.3.1.3, B.1.3.1.5, B.1.3.1.6 and B1.3.2.3. However, it's an option NAV (Not AVailable) i.e. omit the octet carrying the parameter. This contradicts

what is stated in TS 24.008.

The UIMI parameter is not the only parameter that is not relevant for specifying the radio access bearer. Hoewer, it shall be stored in the MSC and forwarded at handover. The same applies to MaxNumTCH, ACC, and ACCext.

The ACC, and ACCext parameters are not relevant for selecting the RLP version number. Instead the UIMI and the WAIUR are used. (This is specified in detail in TS 24.022). Therefore, the respective paragraph in TS 24.008 is kept as a note.

### Summary of change: %

Notes 2, and 3 are changed to normative text and is clarified the base statement that an MS shall encode the BC IE according to GSM call control requirements also if it is requesting for a UMTS service except for the exception specified in the old note 5 (A terminal not supporting GSM). Note 2 and 4 are clarified following the reason of change of this CR.

# Consequences if not approved:

The current specification text in the section 10.5.4.5 does not describe exactly how a terminal has to code the BC IE and what parameters the MSC has to store and forward in case of inter-system handover.

Furthermore, the fact that the text is not exact creates a contradiction between notes 2 and 5. This lead to misinterpretation and different implementation by vendors and it resuts in undesirable effects for example; already developed and released UMTS only terminals in Japan have wrongly been implemented because of no accurate text in section 10.5.4.5. Those terminals include octet 6d -Other Modern Type (OMT) and Fixed Network User Rate (FNUR)-, but not octet 6e, which includes Acceptable Channel Codings (ACC) and Maximum Number of TCH (MaxNumTCH), following only the note 2 (GSM call control requirements), even though note 5 mandates for a UMTS only terminal to include both and the same is stated in the section 10.5.4.5.1. This wrong implementation results in that compliant networks following the specifications might not establish nontransparent services resquested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is cointained in the octet 6f, mandated to be include in the BC-IE for those services. (Having to include WAIUR, i.e. octet 6f, implies that all previous octets have to be included too).

Clauses affected:	<b>10.5.4.5</b>
	YN
Other specs	★ X Other core specifications   ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications    ★ Y Other core specifications     ★ Y Other core specifications     ★ Y Other core specifications
affected:	X Test specifications
	X O&M Specifications
Other comments:	<b>₩</b>

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

- 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.

# 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	_
			Bearer	capability	/ IEI			octet 1
		ength of t	ha haarar	capability	contonto			octet 2
0/1		dio	CO-	trans		nformatic	n	Octet 2
ext		nnel	ding	fer	"	transfer	111	octet 3
		ement	std	mode		capability	/	
0/1	0		0		•			
ext	co-	CTM	spare	pare speech version				octet 3a*
	ding				indica	ation		
0/1	0	0	0					
ext	CO-	spare	spare		speech			octet 3b etc
	ding			ali i al	indica			-
1	comp	otru	oturo	dupl.	confi	NIRR	esta- bli.	actat 4*
0/1	-ress.	0	cture	mode te	gur.	l signalling		octet 4*
ext	acce		_	otion				octet 5*
0/1	acce	55 IU.		r rate	0	ess prote	0	ociei 5
ext	Othe	r ITC		otion		Spare	U	octet 5a*
1	Hdr/	Multi	Mode	LLI	Assig	Inb.	0	00101 04
ext	noHdr	frame	Mode		nor/e	neg	Spare	octet 5b*
0/1	0	1		User info		- 3	sync/	
ext	layer	1 id.		layer 1 p			async	octet 6*
0/1	numb.	nego-	numb.					
ext	stop	tia-	data		user	rate		octet 6a*
	bits	tion	bits					
0/1	inter		NIC	NIC				
ext		ite	on TX	on RX		Parity		octet 6b*
0/1		ection						
0/1		nent		mo	odem type	е		octet 6c*
		her m typo		Eivod no	etwork us	or rata		octet 6d*
0/1	model	m type	table	rixeu ne		errate num num	her of	octet ou
ext			nnel			fic chanr		octet 6e*
CAL		cod			lia	no onani	1010	00101 00
0/1		UIMI	90	V	/anted aii	r interfac	e	-
ext					user		-	octet 6f*
1	1	Acceptable	e			0	0	1
ext		annel codi		Asym	metry			
		extended		Indica			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, with the following exceptions:-

- 1. 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)
- 2. Furthermore, a mobile station not supporting GSM shall also set the following parameters to the value "0", if the respective octets have to be included in the bearer capability information element according to subclause 10.5.4.5.1 and 3GPP TS 27.001 [36]:
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7)

#### NOTE 3:

For UTRAN access the following parameters are is irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, the parameters if received, shall, however, be stored in the MSC, and forwarded at handover:

- 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)

NOTE <u>24</u>: 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)
- Wanted air interface user rate (octet 6f, bits 1-4)
- UIMI, User initiated modification indication (octet 6f, bits 5-7)
- Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
- Acceptable Channel Codings extended (octet 6g, bits 5-7).

NOTE 5: 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).

# 3GPP TSG-CN1 Meeting #29

# Tdoc N1-030555 Revision of N-030490

Sophia-Antipolis, France, 31 March – 04 April 2003

	CHANGE	REQ	JEST			CR-Form-v7
ж <mark>2</mark>	4.008 CR 754	жrev	<b>3</b> **	Current vers	ion: 4.10.0	*
For <u>HELP</u> on using	g this form, see bottom of this	page or l	ook at the	pop-up text	over the <b>%</b> syn	nbols.
Proposed change affe	ects: UICC apps#	ME X	Radio Ad	cess Networ	k Core Ne	twork X
Title:	Bearer Capability IE					
Source: # E	ricsson					
Work item code: 第 T	E14			Date: ₩	04/04/2003	
De	<ul> <li>one of the following categories</li> <li>F (correction)</li> <li>A (corresponds to a correction</li> <li>B (addition of feature),</li> <li>C (functional modification of foliation)</li> <li>etailed explanations of the above found in 3GPP TR 21.900.</li> </ul>	categories  adiction in the BC IE a UMTS of following on octet to is UMTS of the only Hoewer, it ies to Maxarameters	TS 24.00 shall be content for shall be content for shall be shall	2 ) R96 R97 R98 R99 Rel-4 Rel-5 Rel-6  8 section 10. oded accord or some serv omitted. Not shall always  r that is not retored in the language.	the following releting to Elevant for speems of the Court	notes 2 I control ops, the the note th zero cifying arded at
Summary of change: 8	TS 24.022; therefore, the  Notes 2, and 3 are chang that an MS shall encode t also if it is requesting for a the old note 5 (A terminal following the reason of ch	ed to norm he BC IE a UMTS se not suppo	native text according ervice exc orting GSN	t and is clarification to GSM call	ied the base state control require xception specification.	atement ments ied in
Consequences if not approved:	The current specification to how a terminal has to code and forward in case of interpretations.  Furthermore, the fact that notes 2 and 5. This lead to	le the BC er-system the text is	E and when handover some not exact	at paramete c. t creates a c	rs the MSC has ontradiction bet	s to store

vendors and it resuts in undesirable effects for example; already developed and released UMTS only terminals in Japan have wrongly been implemented because of no accurate text in section 10.5.4.5. Those terminals include octet 6d -Other Modem Type (OMT) and Fixed Network User Rate (FNUR)-, but not octet 6e, which includes Acceptable Channel Codings (ACC) and Maximum Number of TCH (MaxNumTCH), following only the note 2 (GSM call control requirements), even though note 5 mandates for a UMTS only terminal to include both and the same is stated in the section 10.5.4.5.1. This wrong implementation results in that compliant networks following the specifications might not establish non-transparent services resquested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is cointained in the octet 6f, mandated to be include in the BC-IE for those services. (Having to include WAIUR, i.e. octet 6f, implies that all previous octets have to be included too).

Clauses affected:	<b>第 10.5.4.5</b>
Other specs affected:	Y N  X Other core specifications
Other comments:	<b>x</b>

### How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \( \mathbb{H} \) 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.

# 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	_
			Bearer	capability	/ IEI			octet 1
			he bearer					
0/4		<u> </u>	octet 2					
0/1 ext		dio nnel	co- ding	trans fer	l II	nformatio transfer	n	octet 3
EXI		ement	std	mode		capability	,	ociei 3
0/1	0	CITICIT	0	mode		capability	<u>/</u>	
ext	co-	СТМ	spare		speech	version		octet 3a*
CAL	ding	OTIVI	Sparc		indica			ootot oa
0/1	0	0	0		maio	411011		-
ext	co-	spare	spare		speech	version		octet 3b etc
	ding				indica			
1	comp			dupl.	confi	NIRR	esta-	1
ext	-ress.	struc	cture	mode	gur.		bli.	octet 4*
0/1	0	0	ra	te		signalling	)	
ext	acce	ss id.	ada			ess prote	ocol	octet 5*
0/1				r rate	0	0	0	
ext		r ITC	ada			Spare		octet 5a*
1	Hdr/	Multi	Mode	LLI	Assig	Inb.	0	
ext	noHdr	frame		L	nor/e	neg	Spare	octet 5b*
0/1	0	1		User info			sync/	0*
ext	layer			layer 1 p	rotocol		async	octet 6*
0/1	numb.	nego-	numb.					
ext	stop bits	tia- tion	data bits		user	rate		octet 6a*
0/1	inter		NIC	NIC	l			-
ext		te	on TX	on RX		Parity		octet 6b*
0/1		ection	OILLY	UITIX		1 any		Octet ob
ext		nent		mo	odem typ	Δ		octet 6c*
0/1	Ot			1110	odom typ	<u> </u>		00101 00
ext		n type		Fixed ne	etwork us	er rate		octet 6d*
0/1			otable			num num	ber of	
ext			nnel		traf	fic chanr	nels	octet 6e*
		cod	ings					
0/1		UIMI		V	anted ai	r interfac	е	
ext					user	rate		octet 6f*
1		Acceptable				0	0	
ext	cha	nnel codi		Asym		_		
		extended	1	Indica			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, with the following exceptions:

- 1. 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)
- Furthermore, a mobile station not supporting GSM shall also set the following parameters to the value "0", if the respective octets have to be included in the bearer capability information element according to subclause 10.5.4.5.1 and 3GPP TS 27.001 [36]:
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7)

#### NOTE 3:

For UTRAN access the following parameters are is irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, the parameters if received, shall, however, be stored in the MSC, and forwarded at handover:

- 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)

NOTE <u>24</u>: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)
- Wanted air interface user rate (octet 6f, bits 1-4)
- UIMI, User initiated modification indication (octet 6f, bits 5-7)
- Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
- Acceptable Channel Codings extended (octet 6g, bits 5-7).

NOTE 5: 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).

# 3GPP TSG-CN1 Meeting #29

# Tdoc N1-030556 Revision of N1-030491

Sophia-Antipolis, France, 31 March – 04 April 2003

Обрина-Антиро	CHANGE REQUEST									
ж	24.00	8 CR	755	жre	/ 3	æ	Current ve	ersion:	5.7.0	æ
For <u>HELP</u> on using this form, see bottom of this page or look at the pop-up text over the <b>%</b> symbols.										
Proposed change a			пррѕж	ME	X Ra	idio A	ccess Netv	vork	Core N	etwork X
Title:	Bearer	Capabilit	ty IE							
Source: #	Ericsso	n								
Work item code: 第	TEI <del>5</del>						Date:	₩ 04	1/04/2003	
	Use <u>one</u> (c F (c A (c B (a C (f D (e Detailed e	orrection) correspond addition of unctional editorial m explanatio	ds to a corre	ection in an			2	of the f (GS (Rei (Rei (Rei (Rei (Rei	el-5 following rela M Phase 2) lease 1996) lease 1997) lease 1999) lease 4) lease 5) lease 6)	
Reason for change.	an ev pa 2, va Th the ha Th nu TS	d 5. Note en when rameters saying the even e UIMI peradio acordover.	e 2 states the requesting in octet 66 at the external arameter is common are arameter is common arameter is common arameter is common are arameter is common are arameter is common are arameter is common are arameter is common are	hat the BC I for a UMT e and followers inal is UMT is not the oper. Hoewe applies to to paramete JIMI and the	IE sha FS servenings of wings of to oci FS only nly parr, it sha MaxNu ers are the WAll ctive pa	all be vice. If can be tet 6e /.  amete all be mTC not rule aragra	ook section coded according to some see omitted. No shall always that is no stored in the H, ACC, and elevant for re used. (Thaph in TS 2 okt and is classed.	ording pervices lote 5 lys be i or relevate MSC d ACC selections is s 4.008 i	to GSM cases e.g. 9.6 k contradicts ncluded water rant for special contradicts cand forward cext.	Il control bps, the s the note ith zero ecifying arded at version detail in a note.
Summary of Change	tha red ex fre	at an MS quirement ception s	shall encounts also if it specified in	de the BC is request the old no	IE acc ing for te 5 (A	ordin a ser term	g to A/Gb n vice in lu m inal not sup following to	node c ode ex portin	all control xcept for th g any of th	ne e GSM
Consequences if not approved:	ho an	w a term d forward	inal has to d in case of	code the I f inter-syst	BC IE a em har	and w ndove	10.5.4.5 do hat parameer.	ters th	ne MSC ha	s to store

notes 2 and 5. This lead to misinterpretation and different implementation by vendors and it resuts in undesirable effects for example; already developed and released UMTS only terminals in Japan have wrongly been implemented because of no accurate text in section 10.5.4.5. Those terminals include octet 6d -Other Modem Type (OMT) and Fixed Network User Rate (FNUR)-, but not octet 6e, which includes Acceptable Channel Codings (ACC) and Maximum Number of TCH (MaxNumTCH), following only the note 2 (GSM call control requirements), even though note 5 mandates for a UMTS only terminal to include both and the same is stated in the section 10.5.4.5.1. This wrong implementation results in that compliant networks following the specifications might not establish non-transparent services resquested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is cointained in the octet 6f, mandated to be include in the BC-IE for those services. (Having to include WAIUR, i.e. octet 6f, implies that all previous octets have to be included too).

Clauses affected:	<b>第 10.5.4.5</b>
Other specs affected:	Y N  X Other core specifications   Test specifications   O&M Specifications
Other comments:	<b>x</b>

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

- 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://fttp.3gpp.org/specs/">ftp://fttp.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.

# 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	_
			Bearer	capability	/ IEI			octet 1
			h a h a a u a u					a atat 2
0/1		<u>-ength of t</u> dio	co-	capability trans		s nformatio	.n	octet 2
ext		nnel	ding	fer	"	transfer	111	octet 3
OAL		ement	std	mode		capability	,	00101 0
0/1	0	OHIOH	0	111000		оаравші	<u> </u>	-
ext	co-	СТМ	spare		speech	version		octet 3a*
	ding		•		indica			
0/1	0	0	0					
ext	co-	spare	spare		speech			octet 3b etc
	ding				indica			
1	comp			dupl.	confi	NIRR	esta-	
ext	-ress.	l	cture	mode	gur.	<u> </u>	bli.	octet 4*
0/1	0	. 0	_	ite		signalling		= +
ext	acce	SS Id.	ada	otion		ess prote		octet 5*
0/1	Otha	- ITC		r rate	0	0	0	a at at 5 a *
ext 1	Hdr/	r ITC Multi	Mode	otion LLI	Assig	Spare Inb.	0	octet 5a*
ext	noHdr	frame	iviode	LLI	nor/e	neg	Spare	octet 5b*
0/1	0	1		User info		neg	sync/	Octet ob
ext	layer	•		layer 1 p			async	octet 6*
0/1	numb.	nego-	numb.	layor i p	1010001		acyno	00:0: 0
ext	stop	tia-	data		user	rate		octet 6a*
	bits	tion	bits					
0/1	inter	med.	NIC	NIC				
ext	ra	ite	on TX	on RX		Parity		octet 6b*
0/1	conne	ection						
ext		nent		mo	odem typ	<u>e</u>		octet 6c*
0/1		her						
ext	moder	m type		Fixed ne	twork us			octet 6d*
0/1			otable			num num		antat Ca*
ext			nnel ings		liai	fic chanr	ieis	octet 6e*
0/1		UIMI	irigs	١٨	l /anted ai	r interfac	Δ	-
ext		Olivii		Į v	user		C	octet 6f*
1	,	Acceptable	<u> </u>		4361	0	0	00101 01
ext		annel codi		Asym	metrv		0	
		extended		Indica		Sp	are	octet 6g*
1	1	0		User	informat			1
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 <u>A/Gb modeGSM</u> call control requirements also if it is requesting for a <u>UMTS</u>-service in <u>Iu mode</u>, with the following exceptions:

- A mobile station not supporting GERAN A/Gb and GERAN Iu mode 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)
- 2. Furthermore, a mobile station not supporting GERAN A/Gb and GERAN Iu mode shall also set the following parameters to the value "0", if the respective octets have to be included in the bearer capability information element according to subclause 10.5.4.5.1 and 3GPP TS 27.001 [36]:
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7)

#### NOTE 3:

For UTRAN <u>Iu mode</u> access the following parameters <u>are</u> is irrelevant <u>for specifying the radio access bearer</u>, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. <u>However</u>, <u>t</u> he parameter <u>s if received</u>, shall, however, be stored in <u>the MSC</u>, and forwarded at handover:

- 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)
- NOTE 24:The following parameters are relevant in UTRAN Iu mode MTS for non transparent data calls for deciding which RLP version to negotiate in order to avoid renegotiation of RLP version in case of intersystem handover, 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)
  - Wanted air interface user rate (octet 6f, bits 1-4)
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7).
- NOTE 5: 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).

# 3GPP TSG-CN1 Meeting #29

# Tdoc N1-030557 Revision of N1-030492

Sophia-Antipolis, France, 31 March – 04 April 2003

		Cl	HANGE	REQ	UES	T			CR-Form-v7
*	24.00	08 CR 7	56	<b>≋rev</b>	3	€ Curr	ent version	6.0.0	ж
For <u><b>HELP</b></u> on us	ing this	form, see b	ottom of this	s page or	look at	the pop	-up text ov	er the <b>%</b> syr	mbols.
Proposed change a	ffects:	UICC app	s <b>ж</b>	ME X	Radio	Access	s Network	Core Ne	etwork X
Title: 署	Beare	Capability I	E						
Source: #	Ericss	on							
Work item code: ₩	TEI6					1	Date: % 0	4/04/2003	
	F ( A ( B ( C ( D ( Detailed	of the following correction) corresponds addition of feature functional mode editorial modern explanations I in 3GPP TR	to a correction ature), dification of fi fication) of the above	n in an ea		Us ase)	e <u>one</u> of the 2 (G R96 (Ri R97 (Ri R98 (Ri R99 (Ri Rel-4 (Ri Rel-5 (Ri	Rel-6 following rele SM Phase 2) elease 1996) elease 1997) elease 1998) elease 1999) elease 4) elease 5) elease 6)	eases:
Reason for change:	ai ev pa 2, va T th ha	nere is an in nd 5. Note 2 yen when re- arameters in saying that alue even if the ne UIMI para e radio acce andover. The me ACC, and umber. Inste S 24.022; the	states that a questing for octet 6e and the extension the terminal ameter is not ess bearer. He e same appled ACCext para ad the UIMI	the BC IE T a UMTS T d following T on octet to T is UMTS T the only Hoewer, it T is to Ma T arameters T and the	shall be serviced ags can confusion only.  The parametric parametr	be coded be. For so be omit 6e shall beter that be stored CH, AC at relevant	d according ome service tted. Note 5 always be t is not rele d in the MS CC, and AC ont for selected. (This is	to GSM cases e.g. 9.6 kl contradicts included with evant for specific and forward Cext.	Il control bps, the s the note th zero ecifying arded at of version detail in
Summary of change	th re ex	otes 2, and a at an MS sh quirements aception spend 4 are clar	all encode t also if it is re cified in the	the BC IE equesting old note	accord for a s 5 (A te	ling to A service in rminal n	/Gb mode n lu mode e ot supporti	call control except for thing GSM). N	е
Consequences if not approved:	ho ai F	ne current spow a terminand forward in urthermore, otes 2 and 5	al has to cod n case of into the fact that	the BC er-system the text	IE and hando	what pa over. xact cre	arameters t ates a cont	the MSC has	s to store tween

vendors and it resuts in undesirable effects for example; already developed and released UMTS only terminals in Japan have wrongly been implemented because of no accurate text in section 10.5.4.5. Those terminals include octet 6d -Other Modem Type (OMT) and Fixed Network User Rate (FNUR)-, but not octet 6e, which includes Acceptable Channel Codings (ACC) and Maximum Number of TCH (MaxNumTCH), following only the note 2 (GSM call control requirements), even though note 5 mandates for a UMTS only terminal to include both and the same is stated in the section 10.5.4.5.1. This wrong implementation results in that compliant networks following the specifications might not establish non-transparent services resquested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is cointained in the octet 6f, mandated to be include in the BC-IE for those services. (Having to include WAIUR, i.e. octet 6f, implies that all previous octets have to be included too).

Clauses affected:	<b>第 10.5.4.5</b>
Other specs affected:	Y N  X Other core specifications
Other comments:	<b>x</b>

### How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked \( \mathbb{H} \) 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.

# 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	_
			Bearer	capability	/ IEI			octet 1
			h a h a a u a u					a atat 2
0/1		<u>-ength of t</u> dio	co-	capability trans		s nformatio	.n	octet 2
ext		nnel	ding	fer	"	transfer	111	octet 3
OAL		ement	std	mode		capability	,	00101 0
0/1	0	OTTOTAL	0	111000		оаравші	<u> </u>	-
ext	co-	СТМ	spare		speech	version		octet 3a*
	ding		•		indica			
0/1	0	0	0					
ext	co-	spare	spare		speech			octet 3b etc
	ding				indica			
1	comp			dupl.	confi	NIRR	esta-	
ext	-ress.	l	cture	mode	gur.	<u> </u>	bli.	octet 4*
0/1	0	. 0	_	ite		signalling		= +
ext	acce	SS Id.	ada	otion		ess prote		octet 5*
0/1	Otha	- ITC		r rate	0	0	0	a at at 5 a *
ext 1	Hdr/	r ITC Multi	Mode	otion LLI	Assig	Spare Inb.	0	octet 5a*
ext	noHdr	frame	iviode	LLI	nor/e	neg	Spare	octet 5b*
0/1	0	1		User info		neg	sync/	Octet ob
ext	layer	•		layer 1 p			async	octet 6*
0/1	numb.	nego-	numb.	layor i p	1010001		acyno	00:0: 0
ext	stop	tia-	data		user	rate		octet 6a*
	bits	tion	bits					
0/1	inter	med.	NIC	NIC				
ext	ra	ite	on TX	on RX		Parity		octet 6b*
0/1	conne	ection						
ext		nent		mo	odem typ	<u>e</u>		octet 6c*
0/1		her						
ext	moder	m type		Fixed ne	twork us			octet 6d*
0/1			otable			num num		antat Ca*
ext			nnel ings		liai	fic chanr	ieis	octet 6e*
0/1		UIMI	irigs	١٨	l /anted ai	r interfac	Δ	-
ext		Olivii		Į v	user		C	octet 6f*
1	,	Acceptable	<u> </u>		4361	0	0	00101 01
ext		annel codi		Asym	metrv		0	
		extended		Indica		Sp	are	octet 6g*
1	1	0		User	informat			1
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 <u>A/Gb modeGSM</u> call control requirements also if it is requesting for a <u>UMTS</u>-service in <u>Iu mode</u>, with the following exceptions:

- A mobile station not supporting GERAN A/Gb and GERAN Iu mode 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)
- 2. Furthermore, a mobile station not supporting GERAN A/Gb and GERAN Iu mode shall also set the following parameters to the value "0", if the respective octets have to be included in the bearer capability information element according to subclause 10.5.4.5.1 and 3GPP TS 27.001 [36]:
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7)

#### NOTE 3:

For UTRAN <u>Iu mode</u> access the following parameters <u>are</u> is irrelevant <u>for specifying the radio access bearer</u>, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. <u>However</u>, <u>t</u> he parameter <u>s if received</u>, shall, however, be stored in <u>the MSC</u>, and forwarded at handover:

- 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)
- NOTE 24:The following parameters are relevant in UTRAN Iu mode MTS for non transparent data calls for deciding which RLP version to negotiate in order to avoid renegotiation of RLP version in case of intersystem handover, 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)
  - Wanted air interface user rate (octet 6f, bits 1-4)
  - UIMI, User initiated modification indication (octet 6f, bits 5-7)
  - Acceptable Channel coding(s) (octet 6e, bits 4, 5 and 7)
  - Acceptable Channel Codings extended (octet 6g, bits 5-7).
- NOTE 5: 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).

Sall Die	go, ca	aiii C	инна	<i>,</i> 03A,	19-	23 iviay	200	<i>)</i> 3				
				CI	HANGI	E REQ	UE	ST	-			CR-Form-v7
*		24	.008	CR	761	жrev	1	æ	Current ve	ersion:	3.15.0	<b>)</b> #
		-				_			e pop-up te		-	
Proposed	change			JICC app			Rad	dio A	ccess Netv	vork	Core N	letwork X
Title:	Ж	Pro	vision	of DNS	server IPv6	address						
Source:	ж	Eri	csson									
Work item	code: #	TE	l						Date:	<b>%</b> 20/	05/2003	
Category:	ж	F							Release:	<b>₩</b> R9	a	
Calegory.	on	Use	F (corr A (corr B (add C (fundation D (editation)	rection) responds dition of fe ctional mod torial mod	ndification of ification) of the abov	ion in an ea f feature)		eleas	Use <u>one</u> 2	of the fo (GSN (Rele (Rele (Rele (Rele (Rele	ollowing re M Phase 2 ease 1996 ease 1997 ease 1998 ease 4) ease 5) ease 6)	) ) )
	_									•	,	
Reason fo	r change	e: X	The SA2 topic	proposed has disc	possibilitie I method is ussed the t LS N1-030	s (provided s already stopic, and a 0538), as \$	d by F tanda asks SA2 tl	RFCs ardise CN1 hink	server IPv6 s) compared ed from rel- to allign R9 this is an es cifications.	d to IPv 5 onwa 99 and	4 options rds. R4 with F	s. R5 on the
Summary	of chang	ge:	addro intro	ess from duced fro	introductio	on of IPv6,	the a	Ireac	the MS with dy approved I-99 or Rel-	d metho	od from re	el-5 is
Conseque not approv		*			ided config rom the la			serv	er IPv6 add	dress is	not poss	ible in a
Clauses at	CC 41 -	00	0.40	\ <b>.</b>								
Other spec		*	Y N X X X	Test sp	ore specificetions	3	¥		060 (CR no 061 (CR no			
Other com	nments:	æ										
2 OOIII												

How to create CRs using this form:

- 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.

# \*\*\*\* 1<sup>st</sup> change \*\*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

Trevense as m	e present deciment
[1]	Void.
[2]	Void.
[2a]	3GPP TR 21.905 "Vocabulary for 3GPP Specifications"
[3]	3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)".
[4]	3GPP TS 22.003: "Teleservices supported by a Public Land Mobile Network (PLMN)".
[5]	3GPP TS 02.09: "Security aspects".
[5a]	3GPP TS 33.102: "3G security; Security architecture".
[6]	3GPP TS 22.011: "Service accessibility".
[7]	3GPP TS 02.17: "Subscriber Identity Modules (SIM); Functional characteristics".
[8]	3GPP TS 22.101: "Service aspects; Service principles".
[8a]	3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".
[8b]	3GPP TS 23.038: "Alphabets and language-specific information".
[9]	3GPP TS 23.101: "General UMTS Architecture".
[9a]	3GPP TS 23.108: "Mobile radio interface layer 3 specification core network protocols; Stage 2 (structured procedures)".
[10]	3GPP TS 23.003: "Numbering, addressing and identification".
[11]	3GPP TS 03.13: "Discontinuous Reception (DRX) in the GSM system".
[12]	3GPP TS 23.014: "Support of Dual Tone Multi-Frequency (DTMF) signalling".
[12a]	Void.
[13]	3GPP TS 03.20: "Security-related network functions".
[14]	3GPP TS 23.122: " Non-Access-Stratum functions related to Mobile Station (MS) in idle mode".
[15]	3GPP TS 24.002: "GSM-UMTS Public Land Mobile Network (PLMN) access reference configuration".
[16]	3GPP TS 04.03: "Mobile Station - Base Station System (MS - BSS) interface Channel structures

and access capabilities".

[17]	3GPP TS 04.04: "Layer 1; General requirements".
[18]	3GPP TS 04.05: "Data Link (DL) layer; General aspects".
[19]	3GPP TS 04.06: "Mobile Station - Base Station System (MS - BSS) interface; Data Link (DL) layer specification".
[19a]	3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
[19b]	3GPP TS 25.322: "Radio Link Control (RLC) protocol specification".
[19c]	3GPP TS 25.413: "UTRAN Iu interface RANAP signalling".
[20]	3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".
[21]	3GPP TS 24.010: "Mobile radio interface layer 3; Supplementary services specification; General aspects".
[22]	3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
[23]	3GPP TS 24.012: "Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface".
[23a]	3GPP TS 04.71: "Location Services (LCS); Mobile radio interface layer 3 specification".
[23b]	3GPP TS 04.31: "Location Services (LCS); Mobile Station (MS) - Serving Mobile Location Centre (SMLC); Radio Resource LCS Protocol (RRLP)".
[23c]	3GPP TS 25.331: "Radio Resource Control (RRC) protocol specification".
[24]	3GPP TS 24.080: "Mobile radio Layer 3 supplementary services specification; Formats and coding".
[25]	3GPP TS 24.081: "Line identification supplementary services; Stage 3".
[26]	3GPP TS 24.082: "Call Forwarding (CF) supplementary services; Stage 3".
[27]	3GPP TS 24.083: "Call Waiting (CW) and Call Hold (HOLD) supplementary services; Stage 3".
[28]	3GPP TS 24.084: "MultiParty (MPTY) supplementary services; Stage 3".
[29]	3GPP TS 24.085: "Closed User Group (CUG) supplementary services; Stage 3".
[30]	3GPP TS 24.086: "Advice of Charge (AoC) supplementary services; Stage 3".
[31]	3GPP TS 24.088: "Call Barring (CB) supplementary services; Stage 3".
[32]	3GPP TS 05.02: "Multiplexing and multiple access on the radio path".
[33]	3GPP TS 05.05: "Radio transmission and reception".
[34]	3GPP TS 05.08: "Radio subsystem link control".
[35]	3GPP TS 05.10: "Radio subsystem synchronization".
[36]	3GPP TS 27.001: "General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".
[36a]	3GPP TS 27.060: "Mobile Station (MS) supporting Packet Switched Services ".
[37]	3GPP TS 29.002: "Mobile Application Part (MAP) specification".
[38]	3GPP TS 29.007: "General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)".
[39]	3GPP TS 11.10: "Mobile Station (MS) conformity specification".

[40] 3GPP TS 11.21: "Base Station System (BSS) equipment specification; Radio aspects ". [41] ISO/IEC 646 (1991): "Information technology - ISO 7-bit coded character set for information interchange". [42] ISO/IEC 6429: "Information technology - Control functions for coded character sets". [43] ISO 8348 (1987): "Information processing systems - Data communications - Network service definition". ITU-T Recommendation E.163: "Numbering plan for the international telephone service". [44] [45] ITU-T Recommendation E.164: "Numbering plan for the ISDN era". [46] ITU-T Recommendation E.212: "Identification plan for land mobile stations". [47] ITU-T Recommendation F.69 (1993): "Plan for telex destination codes". [48] ITU-T Recommendation I.330: "ISDN numbering and addressing principles". [49] ITU-T Recommendation I.440 (1989): "ISDN user-network interface data link layer - General aspects". [50] ITU-T Recommendation I.450 (1989): "ISDN user-network interface layer 3 General aspects". [51] ITU-T Recommendation I.500 (1993): "General structure of the ISDN interworking recommendations". [52] ITU-T Recommendation T.50: "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange". [53] ITU Recommendation Q.931: ISDN user-network interface layer 3 specification for basic control". [54] ITU-T Recommendation V.21: "300 bits per second duplex modem standardized for use in the general switched telephone network". [55] ITU-T Recommendation V.22: "1200 bits per second duplex modem standardized for use in the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits". [56] ITU-T Recommendation V.22bis: "2400 bits per second duplex modem using the frequency division technique standardized for use on the general switched telephone network and on pointto-point 2-wire leased telephone-type circuits". [57] ITU-T Recommendation V.23: "600/1200-baud modem standardized for use in the general switched telephone network". [58] ITU-T Recommendation V.26ter: "2400 bits per second duplex modem using the echo cancellation technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits". [59] ITU-T Recommendation V.32: "A family of 2-wire, duplex modems operating at data signalling rates of up to 9600 bit/s for use on the general switched telephone network and on leased telephone-type circuits". [60] ITU-T Recommendation V.110: "Support of data terminal equipments (DTEs) with V-Series interfaces by an integrated services digital network". [61] ITU-T Recommendation V.120: "Support by an ISDN of data terminal equipment with V-Series type interfaces with provision for statistical multiplexing". [62] ITU-T Recommendation X.21: "Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for synchronous operation on public data networks". [63] ITU-T Recommendation X.25: "Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and connected to

public data networks by dedicated circuit".

[64] ITU-T Recommendation X.28: "DTE/DCE interface for a start-stop mode data terminal equipment accessing the packet assembly/disassembly facility (PAD) in a public data network situated in the same country". [65] ITU-T Recommendation X.30: "Support of X.21, X.21 bis and X.20 bis based data terminal equipments (DTEs) by an integrated services digital network (ISDN)". ITU-T Recommendation X.31: "Support of packet mode terminal equipment by an ISDN". [66] [67] ITU-T Recommendation X.32: "Interface between data terminal equipment (DTE) and data circuit-terminating equipment (DCE) for terminals operating in the packet mode and accessing a packet switched public data network through a public switched telephone network or an integrated services digital network or a circuit switched public data network". ITU-T Recommendation X.75 (1988): "Packet-switched signalling system between public [68] networks providing data transmission services". [69] ITU-T Recommendation X.121: "International numbering plan for public data networks". ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3; [70] Specifications for basic call control". [71] ETS 300 102-2: "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control; Specification Description Language (SDL) diagrams ". ISO/IEC10646: "Universal Multiple-Octet Coded Character Set (UCS)"; UCS2, 16 bit coding. [72] [73] 3GPP TS 22.060: "General Packet Radio Service (GPRS); Service Description; Stage 1". [74] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service Description; Stage 2". 3GPP TS 03.64: "General Packet Radio Service (GPRS); Overall description of the GPRS radio [75] interface; Stage 2". [76] 3GPP TS 04.60: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol". [77] IETF RFC 1034: "Domain names - Concepts and Facilities ". [78] 3GPP TS 04.65: "General Packet Radio Service (GPRS); Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCP)". [78a] 3GPP TS 04.64: "Mobile Station - Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) Layer Specification". [79] ITU Recommendation I.460: "Multiplexing, rate adaption and support of existing services". [80] 3GPP TS 26.111: "Codec for Circuit Switched Multimedia Telephony Service; Modifications to H.324". [81] 3GPP TS 23.107: "Quality of Service (QoS) concept and architecture". [82] 3GPP TS 03.22: "Functions related to Mobile Station (MS) in idle mode and group receive mode". [82a] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode". 3GPP TS 04.18: "Mobile radio interface layer 3 specification, Radio Resource Control Protocol". [83] [84] 3GPP TS 03.55: "Dual Transfer Mode (DTM); Stage 2". [85] 3GPP TS 23.067: "enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 2". [85a] 3GPP TS 23.093: "Technical realization of Completion of Calls to Busy Subscriber (CCBS); Stage 2". [86] 3GPP TS 26.103: "Speech Codec List for GSM and UMTS"

[87]	3GPP TS 08.08: "Mobile-services Switching Centre – Base Station System (MSC – BSS) interface; layer 3 specification".
[88]	3GPP TS 08.18: "General Packet Radio Service (GPRS); Base Station System (BSS) - Serving GPRS Support Node (SGSN); BSS GPRS Protocol (BSSGP)".
[89]	3GPP TS 22.042: "Network Identity and Time Zone (NITZ), Stage 1".
[90]	3GPP TS 23.040: "Technical realization of Short Message Service (SMS)".
[91]	3GPP TS 04.56: "GSM Cordless Telephony System (CTS), (Phase 1) CTS Radio Interface Layer 3 Specification".
[92]	RFC 3513 (April 2003): "Internet Protocol Version 6 (IPv6) Addressing Architecture".
[93]	RFC 1661 (July 1994): "The Point-to-Point Protocol (PPP)".
[94]	RFC 3232 (January 2002): "Assigned Numbers: RFC 1700 is Replaced by an On-line Database".

# \*\*\*\* 2<sup>nd</sup> change \*\*\*\*

# 10.5.6.3 Protocol configuration options

The purpose of the *protocol configuration options* information element is to transfer external network protocol options associated with a PDP context activation.

The *protocol configuration options* is a type 4 information element with a minimum length of  $\underline{32}$  octets and a maximum length of 253 octets.

The *protocol configuration options* information element is coded as shown in figure 10.5.136/3GPP TS 24.008 and table 10.5.154/3GPP TS 24.008.

8	7	6	5	4	3	2	1
				ration op			octet 1
	Le	ngth of pro		nfig. opti			octet 2
1			0 0			onfiguration	octet 3
ext		Spa				protocol	
			Protoc	ol ID 1			octet 4
		Longth	of protos	ad ID 1 a	ontonto		octet 5
		Length	or protoc	col ID 1 c	ontents		octet 6 octet 7
		Pro	otocol ID	1 conter	nts		
			Drotoo	ol ID 2			octet m octet m+
			FIOLOC	01102			octet m+
		Length	of protoc	col ID 2 c	ontents		octet m+
		Longun	o. p. o.o.	, or 12 2 0	OTILOTILO		octet m+
		Pro	otocol ID	2 conter	nts		ootot III i
							octet n
							octet n+1
							octet <u>v</u> ×
			Protoco	ol ID n-1			octet vx+
		1		LID 4			octet <u>v</u> ×+
		Length o	r protoco	01 ID n-1	contents		octet vx+
		Pro	tocol ID	n-1 conte	ents		octet vx+
			Protoc	ol ID n			octet <u>w</u> y-
			1 10100	וו טו וטי			octet wy-
		Lenath	of protoc	col ID n c	ontents		octet wy-
			- p				octet w <del>y</del> -
		Pro	otocol ID	n conter	nts		
							octet <u>x</u> z
			Contair	ner ID 1			octet x+1
							octet x+2
				ner ID 1 d			octet x+3
		Cor	ntainer IL	O 1 conte	<u>nts</u>		octet x+4
							octet y
							octet y+1
				<u></u>			30.0.7
			_				octet z
			Contair	ner ID n			octet z+1
							octet z+2
				ner ID n o			octet z+3
		Cor	ntainer IE	On conte	<u>nts</u>		octet z+4
							octet z

Figure 10.5.136/3GPP TS 24.008: Protocol configuration options information element

#### Table 10.5.154/3GPP TS 24.008: Protocol configuration options information element

Configuration protocol (octet 3)
Bits
3 2 1
0 0 0 PPP for use with IP PDP type

All other values are interpreted as PPP in this version of the protocol.

After octet 3, i.e. from octet 4 to octet z, two logical lists are defined:

- the Configuration protocol options list (octets 4 to x), and
- the Additional parameters list (octets x+1 to z).

#### Configuration protocol options list (octets 4 to xz)

The configuration protocol options list contains a variable number of logical units, they may occur in an arbitrary order within the configuration protocol options list.

Each unit is of variable length and consists of a:

- protocol identifier (2 octets);
- the length of the protocol identifier contents of the unit (1 octet); and
- the protocol identifier contents itself (n octets).

The *protocol identifier* field contains the hexadecimal coding of the configuration protocol identifier. Bit 8 of the first octet of the *protocol identifier* field contains the most significant bit and bit 1 of the second octet of the *protocol identifier* field contains the least significant bit.

If the configuration protocol options list contains a protocol identifier that is not supported by the receiving entity the corresponding unit shall be discarded.

The *length of the protocol identifier contents* field contains the binary coded representation of the length of the *protocol identifier contents* field of a unit. The first bit in transmission order is the most significant bit.

The *protocol identifier contents* field of each unit contains information specific to the configuration protocol specified by the *protocol identifier*.

### PPP

At least the following protocol identifiers (as defined in RFC  $\frac{3232}{1700}$  [94]) shall be supported in this version of the protocol:

- C021H (LCP;
- C023H (PAP);
- C223H (CHAP); and
- 8021H (ÎPCP).

The support of other protocol identifiers is implementation dependent and outside the scope of the present document.

The protocol identifier contents field of each unit corresponds to a "Packet" as defined in RFC 1661 [93] that is stripped off the "Protocol" and the "Padding" octets.

The detailed coding of the *protocol identifier contents* field is specified in the RFC that is associated with the protocol identifier of that unit.

#### Additional parameters list (octets x+1 to z)

The additional parameters list is included when special parameters and/or requests (associated with a PDP context) need to be transferred between the MS and the network. These parameters and/or requests are not related to a specific configuration protocol (e.g. PPP), and therefore are not encoded as the "Packets" contained in the configuration protocol options list.

The additional parameters list contains a list of special parameters, each one in a separate container. The type of the parameter carried in a container is identified by a specific container identifier. In this version of the protocol, the following container identifiers are specified:

#### MS to network direction:

0003H (DNS Server Address Request).

#### Network to MS direction:

- 0003H (DNS Server Address).

If the additional parameters list contains a container identifier that is not supported by the receiving entity the corresponding unit shall be discarded.

The container identifier field is encoded as the protocol identifier field and the length of container identifier contents field is encoded as the length of the protocol identifier contents field.

When the container identifier indicates DNS Server Address Request, the container identifier contents field is empty and the length of container identifier contents indicates a length equal to zero. If the container identifier contents field is not empty, it shall be ignored.

When the *container identifier* indicates DNS Server Address, the *container identifier contents* field contains one IPv6 DNS server address (see 3GPP TS 27.060 [36a]). This IPv6 address is encoded as a 128-bit address according to RFC 2373 [92]. When there is need to include more than one DNS server address, then more logical units with *container identifier* indicating DNS Server Address are used.

NOTE 1: The additional parameters list and the configuration protocol options list are logically separated since they carry different type of information. The beginning of the additional parameters list is marked by a logical unit, which has an identifier (i.e. the first two octets) equal to a container identifier (i.e. it is not a protocol identifier).

CHANGE REQUEST										
00						<u> </u>	00			- 00
<b>*</b>	24	800.	CR	762	≋rev	1	ж	Current vers	4.10.	<b>0</b> #
For HELP on using this form, see bottom of this page or look at the pop-up text over the % symbols.										
Proposed change			JICC app			Rad	A oib	ccess Netwo	rk Core I	Network X
Title:	₽ Pro	vision	of DNS s	erver IPv6	address					
Source:	€ Erio	csson								
Work item code:	€ IMS	S-CCR	<u>TEI</u>					Date: %	20/05/2003	
Category:	Deta	F (corr A (corr B (add C (fund D (edit iled exp	rection) responds t lition of fea ctional modi rorial modi	ature), dification of fication) of the abov	on in an ear		elease	2	Rel-4 the following re (GSM Phase 2 (Release 1996) (Release 1996) (Release 1996) (Release 4) (Release 5) (Release 6)	2) 5) 7) 3)
Reason for chang		The page 15 SA2 topic that rule address address to the control of	proposed has discu (see incomo changeder to get ess from	method is ussed the t LS N1-030 is is needed a uniform introductio	opic, and a 0538), as S d to the sta	asks (SA2 thage 2) proventhe a	CN1 nink to specified the	to allign R99 this is an essecifications.  the MS with Day approved n	and R4 with ential correcti NS server IP nethod from r	R5 on the on. Note
Consequences if not approved:	ж	opera Netw	ators laur ork provi	nch IPv6). ded config		DNS			ess is not pos	
Clauses affected:	*	2, 10	.5.6.3							
Other specs affected:	ж	Y N X X X	Test spe	ore specific ecifications pecification	;	æ		060 (CR no. 0 061 (CR no. 0		
Other comments:	*									

How to create CRs using this form:

- 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.

# \*\*\*\* 1<sup>st</sup> change \*\*\*\*

# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

	•
[1]	Void.
[2]	Void.
[2a]	3GPP TR 21.905 "Vocabulary for 3GPP Specifications"
[3]	3GPP TS 22.002: "Circuit Bearer Services (BS) supported by a Public Land Mobile Network (PLMN)".
[4]	3GPP TS 22.003: "Teleservices supported by a Public Land Mobile Network (PLMN)".
[5]	3GPP TS 42.009: " Security aspects".
[5a]	3GPP TS 33.102: "3G security; Security architecture".
[6]	3GPP TS 22.011: "Service accessibility".
[7]	3GPP TS 42.017: " Subscriber Identity Modules (SIM); Functional characteristics".
[8]	3GPP TS 22.101: "Service aspects; Service principles".
[8a]	3GPP TS 22.001: "Principles of circuit telecommunication services supported by a Public Land Mobile Network (PLMN)".
[8b]	3GPP TS 23.038: "Alphabets and language-specific information".
[9]	3GPP TS 23.101: "General UMTS Architecture".
[9a]	3GPP TS 23.108: "Mobile radio interface layer 3 specification core network protocols; Stage 2 (structured procedures)".
[10]	3GPP TS 23.003: "Numbering, addressing and identification".
[11]	3GPP TS 43.013: "Discontinuous Reception (DRX) in the GSM system".
[12]	3GPP TS 23.014: "Support of Dual Tone Multi-Frequency (DTMF) signalling".
[12a]	Void.
[13]	3GPP TS 43.020: "Security-related network functions".
[14]	3GPP TS 23.122: "Non-Access-Stratum functions related to Mobile Station (MS) in idle mode".
[15]	3GPP TS 24.002: "GSM-UMTS Public Land Mobile Network (PLMN) access reference configuration".

[16]	3GPP TS 44.003: "Mobile Station - Base Station System (MS - BSS) interface; Channel structures and access capabilities".
[17]	3GPP TS 44.004: "Layer 1; General requirements".
[18]	3GPP TS 44.005: "Data Link (DL) layer; General aspects".
[19]	3GPP TS 44.006: "Mobile Station - Base Station System (MS - BSS) interface; Data Link (DL) layer specification".
[19a]	3GPP TS 25.321: "Medium Access Control (MAC) protocol specification".
[19b]	3GPP TS 25.322: "Radio Link Control (RLC) protocol specification".
[19c]	3GPP TS 25.413: "UTRAN Iu interface RANAP signalling".
[20]	3GPP TS 24.007: "Mobile radio interface signalling layer 3; General aspects".
[21]	3GPP TS 24.010: "Mobile radio interface layer 3; Supplementary services specification; General aspects".
[22]	3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".
[23]	3GPP TS 24.012: "Short Message Service Cell Broadcast (SMSCB) support on the mobile radio interface".
[23a]	3GPP TS 44.071: "Location Services (LCS); Mobile radio interface layer 3 specification."
[23b]	3GPP TS 44.031 "Location Services LCS); Mobile Station (MS) - Serving Mobile Location Centre (SMLC); Radio Resource LCS Protocol (RRLP)".
[23c]	3GPP TS 25.331: "Radio Resource Control (RRC) protocol specification"
[24]	3GPP TS 24.080: "Mobile radio Layer 3 supplementary service specification; Formats and coding".
[25]	3GPP TS 24.081: "Line identification supplementary services; Stage 3".
[26]	3GPP TS 24.082: "Call Forwarding (CF) supplementary services; Stage 3".
[27]	3GPP TS 24.083: "Call Waiting (CW) and Call Hold (HOLD) supplementary services; Stage 3".
[28]	3GPP TS 24.084: "MultiParty (MPTY) supplementary services; Stage 3".
[29]	3GPP TS 24.085: "Closed User Group (CUG) supplementary services; Stage 3".
[30]	3GPP TS 24.086: "Advice of Charge (AoC) supplementary services; Stage 3".
[31]	3GPP TS 24.088: "Call Barring (CB) supplementary services; Stage 3".
[32]	3GPP TS 45.002: "Multiplexing and multiple access on the radio path".
[33]	3GPP TS 45.005: "Radio transmission and reception".
[34]	3GPP TS 45.008: "Radio subsystem link control".
[35]	3GPP TS 45.010: "Radio subsystem synchronization".
[36]	3GPP TS 27.001: "General on Terminal Adaptation Functions (TAF) for Mobile Stations (MS)".
[36a]	3GPP TS 27.060: "Mobile Station (MS) supporting Packet Switched Services ".
[37]	3GPP TS 29.002: "Mobile Application Part (MAP) specification".
[38]	3GPP TS 29.007: "General requirements on interworking between the Public Land Mobile Network (PLMN) and the Integrated Services Digital Network (ISDN) or Public Switched Telephone Network (PSTN)".

[39] 3GPP TS 51.010: "Mobile Station (MS) conformance specification". [40] 3GPP TS 51.021: "GSM radio aspects base station system equipment specification". [41] ISO/IEC 646 (1991): "Information technology - ISO 7-bit coded character set for information interchange". [42] ISO/IEC 6429: "Information technology - Control functions for coded character sets". [43] ISO 8348 (1987): "Information technology -- Open Systems Interconnection -- Network Service Definition". [44] ITU-T Recommendation E.163: "Numbering plan for the international telephone service". [45] ITU-T Recommendation E.164: "The international public telecommunication numbering plan". [46] ITU-T Recommendation E.212: "The international identification plan for mobile terminals and mobile users". [47] ITU-T Recommendation F.69 (1993): "The international telex service - Service and operational provisions of telex destination codes and telex network identification codes". ITU-T Recommendation I.330: "ISDN numbering and addressing principles". [48] [49] ITU-T Recommendation I.440 (1989): "ISDN user-network interface data link layer - General aspects". [50] ITU-T Recommendation I.450 (1989): "ISDN user-network interface layer 3 General aspects". ITU-T Recommendation I.500 (1993): "General structure of the ISDN interworking [51] recommendations". [52] ITU-T Recommendation T.50: "International Reference Alphabet (IRA) (Formerly International Alphabet No. 5 or IA5) - Information technology - 7-bit coded character set for information interchange". [53] ITU Recommendation Q.931: ISDN user-network interface layer 3 specification for basic control". ITU-T Recommendation V.21: "300 bits per second duplex modern standardized for use in the [54] general switched telephone network". ITU-T Recommendation V.22: "1200 bits per second duplex modem standardized for use in the [55] general switched telephone network and on point-to-point 2-wire leased telephone-type circuits". [56] ITU-T Recommendation V.22bis: "2400 bits per second duplex modem using the frequency division technique standardized for use on the general switched telephone network and on pointto-point 2-wire leased telephone-type circuits". [57] Void. [58] ITU-T Recommendation V.26ter: "2400 bits per second duplex modem using the echo cancellation technique standardized for use on the general switched telephone network and on point-to-point 2-wire leased telephone-type circuits". [59] ITU-T Recommendation V.32: "A family of 2-wire, duplex modems operating at data signalling rates of up to 9600 bit/s for use on the general switched telephone network and on leased telephone-type circuits". [60] ITU-T Recommendation V.110: "Support by an ISDN of data terminal equipments with V-Series type interfaces". ITU-T Recommendation V.120: "Support by an ISDN of data terminal equipment with V-Series [61] type interfaces with provision for statistical multiplexing". [62] ITU-T Recommendation X.21: "Interface between Data Terminal Equipment (DTE) and Data

Circuit-terminating Equipment (DCE) for synchronous operation on public data networks".

[63]	Void.
[64]	Void.
[65]	ITU-T Recommendation X.30: "Support of X.21, X.21 bis and X.20 bis based Data Terminal Equipments (DTEs) by an Integrated Services Digital Network (ISDN)".
[66]	ITU-T Recommendation X.31: "Support of packet mode terminal equipment by an ISDN".
[67]	Void.
[68]	Void.
[69]	ITU-T Recommendation X.121: "International numbering plan for public data networks".
[70]	ETSI ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control".
[71]	ETSI ETS 300 102-2: "Integrated Services Digital Network (ISDN); User-network interface layer 3; Specifications for basic call control; Specification Description Language (SDL) diagrams".
[72]	ISO/IEC 10646: "Information technology Universal Multiple-Octet Coded Character Set (UCS)".
[73]	3GPP TS 22.060: "General Packet Radio Service (GPRS); Service Description; Stage 1".
[74]	3GPP TS 23.060: "General Packet Radio Service (GPRS); Service Description; Stage 2".
[75]	3GPP TS 43.064: "General Packet Radio Service (GPRS); Overall description of the GPRS radio interface; Stage $2$ ".
[76]	3GPP TS 44.060: "General Packet Radio Service (GPRS); Mobile Station (MS) - Base Station System (BSS) interface; Radio Link Control/Medium Access Control (RLC/MAC) protocol".
[77]	IETF RFC 1034: "Domain names - concepts and facilities".
[78]	3GPP TS 44.065: "Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCP)".
[78a]	3GPP TS 44.064: "Mobile Station - Serving GPRS Support Node (MS-SGSN) Logical Link Control (LLC) Layer Specification".
[79]	ITU Recommendation I.460: "Multiplexing, rate adaption and support of existing interfaces".
[80]	3GPP TS 26.111: "Codec for Circuit Switched Multimedia Telephony Service; Modifications to H.324".
[81]	3GPP TS 23.107: "Quality of Service (QoS) concept and architecture".
[82]	3GPP TS 43.022: "Functions related to Mobile Station (MS) in idle mode and group receive mode".
[82a]	3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
[83]	3GPP TS 26.103: "Speech Codec List for GSM and UMTS".
[84]	3GPP TS 44.018: "Mobile radio interface layer 3 specification, Radio Resource Control Protocol".
[85]	3GPP TS 48.008: "Mobile-services Switching Centre – Base Station System (MSC – BSS) interface; layer 3 specification".
[86]	3GPP TS 48.018: "General Packet Radio Service (GPRS); Base Station System (BSS) - Serving GPRS Support Node (SGSN); BSS GPRS Protocol (BSSGP)".
[87]	3GPP TS 43.055: "Dual Transfer Mode (DTM); Stage 2".

[88]	3GPP TS 23.067: "enhanced Multi-Level Precedence and Pre-emption service (eMLPP); Stage 2".
[88a]	3GPP TS 23.093: "Technical realization of Completion of Calls to Busy Subscriber (CCBS); Stage 2".
[89]	3GPP TS 22.042: "Network Identity and Time Zone (NITZ), Stage 1".
[90]	3GPP TS 23.040: "Technical realization of Short Message Service (SMS)".
[91]	3GPP TS 44.056: "GSM Cordless Telephony System (CTS), (Phase 1) CTS Radio Interface Layer 3 Specification".
[92]	3GPP TS 23.205: "Bearer-independent circuit-switched core network; Stage 2".
[93]	RFC 3513 (April 2003): "Internet Protocol Version 6 (IPv6) Addressing Architecture".
[94]	RFC 1661 (July 1994): "The Point-to-Point Protocol (PPP)".
[95]	RFC 3232 (January 2002): "Assigned Numbers: RFC 1700 is Replaced by an On-line Database".

\*\*\*\* 2<sup>nd</sup> change \*\*\*\*

# 10.5.6.3 Protocol configuration options

The purpose of the *protocol configuration options* information element is to transfer external network protocol options associated with a PDP context activation.

The *protocol configuration options* is a type 4 information element with a minimum length of  $\underline{32}$  octets and a maximum length of 253 octets.

The *protocol configuration options* information element is coded as shown in figure 10.5.136/3GPP TS 24.008 and table 10.5.154/3GPP TS 24.008.

8	7	6	5	4	3	2	1
				ration op			octet 1
	Le	ngth of pro		nfig. opti			octet 2
1			0 0			onfiguration	octet 3
ext		Spa				protocol	
			Protoc	ol ID 1			octet 4
		Longth	of protos	ad ID 1 a	ontonto		octet 5
		Length	or protoc	col ID 1 c	ontents		octet 6 octet 7
		Pro	otocol ID	1 conter	nts		
			Drotoo	ol ID 2			octet m octet m+
			FIOLOC	01102			octet m+
		Length	of protoc	col ID 2 c	ontents		octet m+
		Longun	o. p. o.o.	, or 12 2 0	OTILOTILO		octet m+
		Pro	otocol ID	2 conter	nts		ootot III i
							octet n
							octet n+1
							octet <u>v</u> ×
			Protoco	ol ID n-1			octet <u>v</u> ×+
		1 4	• •	115 4			octet <u>v</u> ×+
		Length o	f protoco	ol ID n-1	contents		octet vx+
		Pro	tocol ID	n-1 conte	ents		octet vx+
			Protoc	ol ID n			octet <u>w</u> y-
			1 10100	וו טו וטי			octet wy-
		Lenath	of protoc	col ID n c	ontents		octet wy-
			- p				octet w <del>y</del> -
		Pro	otocol ID	n conter	nts		
							octet <u>x</u> z
			Contair	ner ID 1			octet x+1
							octet x+2
				ner ID 1 d			octet x+3
		Cor	ntainer IL	O 1 conte	<u>nts</u>		octet x+4
							octet y
							octet y+1
				<u></u>			30.0.7
			_				octet z
			Contair	ner ID n			octet z+1
							octet z+2
				ner ID n o			octet z+3
		Cor	ntainer IE	On conte	<u>nts</u>		octet z+4
							octet z

Figure 10.5.136/3GPP TS 24.008: Protocol configuration options information element

#### Table 10.5.154/3GPP TS 24.008: Protocol configuration options information element

Configuration protocol (octet 3)
Bits
3 2 1
0 0 0 PPP for use with IP PDP type

All other values are interpreted as PPP in this version of the protocol.

After octet 3, i.e. from octet 4 to octet z, two logical lists are defined:

- the Configuration protocol options list (octets 4 to x), and
- the Additional parameters list (octets x+1 to z).

### Configuration protocol options list (octets 4 to xz)

The configuration protocol options list contains a variable number of logical units, they may occur in an arbitrary order within the configuration protocol options list.

Each unit is of variable length and consists of a:

- protocol identifier (2 octets);
- the length of the protocol identifier contents of the unit (1 octet); and
- the protocol identifier contents itself (n octets).

The *protocol identifier* field contains the hexadecimal coding of the configuration protocol identifier. Bit 8 of the first octet of the *protocol identifier* field contains the most significant bit and bit 1 of the second octet of the *protocol identifier* field contains the least significant bit.

If the configuration protocol options list contains a protocol identifier that is not supported by the receiving entity the corresponding unit shall be discarded.

The *length of the protocol identifier contents* field contains the binary coded representation of the length of the *protocol identifier contents* field of a unit. The first bit in transmission order is the most significant bit.

The *protocol identifier contents* field of each unit contains information specific to the configuration protocol specified by the *protocol identifier*.

### PPP

At least the following protocol identifiers (as defined in RFC 32324700 [95]) shall be supported in this version of the protocol:

- C021H (LCP;
- C023H (PAP);
- C223H (CHAP); and
- 8021H (ÎPCP).

The support of other protocol identifiers is implementation dependent and outside the scope of the present document.

The *protocol identifier contents* field of each unit corresponds to a "Packet" as defined in RFC 1661 [94] that is stripped off the "Protocol" and the "Padding" octets.

The detailed coding of the *protocol identifier contents* field is specified in the RFC that is associated with the protocol identifier of that unit.

#### Additional parameters list (octets x+1 to z)

The additional parameters list is included when special parameters and/or requests (associated with a PDP context) need to be transferred between the MS and the network. These parameters and/or requests are not related to a specific configuration protocol (e.g. PPP), and therefore are not encoded as the "Packets" contained in the configuration protocol options list.

The additional parameters list contains a list of special parameters, each one in a separate container. The type of the parameter carried in a container is identified by a specific *container identifier*. In this version of the protocol, the following container identifiers are specified:

#### MS to network direction:

0003H (DNS Server Address Request).

#### Network to MS direction:

0003H (DNS Server Address).

If the additional parameters list contains a container identifier that is not supported by the receiving entity the corresponding unit shall be discarded.

The container identifier field is encoded as the protocol identifier field and the length of container identifier contents field is encoded as the length of the protocol identifier contents field.

When the container identifier indicates DNS Server Address Request, the container identifier contents field is empty and the length of container identifier contents indicates a length equal to zero. If the container identifier contents field is not empty, it shall be ignored.

When the container identifier indicates DNS Server Address, the container identifier contents field contains one IPv6 DNS server address (see 3GPP TS 27.060 [36a]). This IPv6 address is encoded as a 128-bit address according to RFC 2373 [93]. When there is need to include more than one DNS server address, then more logical units with container identifier indicating DNS Server Address are used.

NOTE 1: The additional parameters list and the configuration protocol options list are logically separated since they carry different type of information. The beginning of the additional parameters list is marked by a logical unit, which has an identifier (i.e. the first two octets) equal to a container identifier (i.e. it is not a protocol identifier).