

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	A	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	A	Rel-4	Bearer Capability IE	4.10.0	4.11.0	N1-29	N1-030555
24.008	755	3	A	Rel-5	Bearer Capability IE	5.7.0	5.8.0	N1-29	N1-030556
24.008	756	3	A	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	A	Rel-4	Provision of DNS server IPv6 address	4.10.0	4.11.0	N1-30	N1-030823

CHANGE REQUEST

⌘ **24.008 CR 751** ⌘ rev **-1** ⌘ Current version: **3.15.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Combined RAU successful for GPRS only, missing GMM cause IE		
Source:	⌘ Siemens AG		
Work item code:	⌘ TEI	Date:	⌘ 21/03/2003
Category:	⌘ F	Release:	⌘ R99
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

Reason for change:	⌘ For the Routing Area Update Accept message, it is specified in 9.4.15.6 that the GMM Cause IE "shall be included if the IMSI attach was not successful for non-GPRS services during a combined GPRS routing area updating procedure" (update type = 'RA/LA updating with IMSI attach'). It needs to be clarified that the IE has to be included generally if the combined routing area updating procedure was successful for GPRS services only, i.e. also if the update type was 'RA/LA updating', without IMSI attach.
Summary of change:	⌘ The condition for the inclusion of the GMM Cause IE in the Routing Area Update Accept message in 9.4.15.6 is clarified.
Consequences if not approved:	⌘ An unclear specification could result in SGSN implementations which do not include the GMM Cause IE when the update was successful for GPRS services only and the update type was 'RA/LA updating' (without IMSI attach). The result would be an undefined MS behaviour for implementations according to R97-Rel-4. A Rel-5 MS would treat this as an abnormal case (N1-030216) and may not be able to receive PS services.

Clauses affected:	⌘ 9.4.15.6										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> </table>	Y	N	X		X		X		Other core specifications	⌘
	Y	N									
	X										
X											
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:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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	M	V	1/2
	Skip indicator	Skip indicator 10.3.1	M	V	1/2
	Routing area update accept message identity	Message type 10.4	M	V	1
	Force to standby	Force to standby 10.5.5.7	M	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	M	V	1
	Routing area identification	Routing area identification 10.5.5.15	M	V	6
19	P-TMSI signature	P-TMSI signature 10.5.5.8	O	TV	4
18	Allocated P-TMSI	Mobile identity 10.5.1.4	O	TLV	7
23	MS identity	Mobile identity 10.5.1.4	O	TLV	7-10
26	List of Receive N-PDU Numbers	Receive N-PDU Number list 10.5.5.11	O	TLV	4 - 19
17	Negotiated READY timer value	GPRS Timer 10.5.7.3	O	TV	2
25	GMM cause	GMM cause 10.5.5.14	O	TV	2
2A	T3302 value	GPRS Timer 2 10.5.7.4	O	TLV	3
8C	Cell Notification	Cell Notification 10.5.5.21	O	T	1
4A	Equivalent PLMNs	PLMN List 10.5.1.13	O	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 [a combined GPRS routing area updating procedure](#) ~~IMSI attach~~ was ~~not~~-successful for ~~non~~-GPRS services ~~only during a combined GPRS routing area updating procedure~~.

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.

CHANGE REQUEST

⌘ **24.008 CR 752** ⌘ rev **1-** ⌘ Current version: **4.10.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Combined RAU successful for GPRS only, missing GMM cause IE		
Source:	⌘ Siemens AG		
Work item code:	⌘ TEI	Date:	⌘ 24/03/2003
Category:	⌘ A	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)		2 (GSM Phase 2)
	A (corresponds to a correction in an earlier release)	R96	(Release 1996)
	B (addition of feature),	R97	(Release 1997)
	C (functional modification of feature)	R98	(Release 1998)
	D (editorial modification)	R99	(Release 1999)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Rel-4 (Release 4)
			Rel-5 (Release 5)
			Rel-6 (Release 6)

Reason for change:	⌘ For the Routing Area Update Accept message, it is specified in 9.4.15.6 that the GMM Cause IE "shall be included if the IMSI attach was not successful for non-GPRS services during a combined GPRS routing area updating procedure" (update type = 'RA/LA updating with IMSI attach'). It needs to be clarified that the IE has to be included generally if the combined routing area updating procedure was successful for GPRS services only, i.e. also if the update type was 'RA/LA updating', without IMSI attach.
Summary of change:	⌘ The condition for the inclusion of the GMM Cause IE in the Routing Area Update Accept message in 9.4.15.6 is clarified.
Consequences if not approved:	⌘ An unclear specification could result in SGSN implementations which do not include the GMM Cause IE when the update was successful for GPRS services only and the update type was 'RA/LA updating' (without IMSI attach). The result would be an undefined MS behaviour for implementations according to R97-Rel-4. A Rel-5 MS would treat this as an abnormal case (N1-030216) and may not be able to receive PS services.

Clauses affected:	⌘ 9.4.15.6										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> </table>	Y	N	X		X		X		Other core specifications	⌘
	Y	N									
	X										
	X										
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:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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	M	V	1/2
	Skip indicator	Skip indicator 10.3.1	M	V	1/2
	Routing area update accept message identity	Message type 10.4	M	V	1
	Force to standby	Force to standby 10.5.5.7	M	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	M	V	1
	Routing area identification	Routing area identification 10.5.5.15	M	V	6
19	P-TMSI signature	P-TMSI signature 10.5.5.8	O	TV	4
18	Allocated P-TMSI	Mobile identity 10.5.1.4	O	TLV	7
23	MS identity	Mobile identity 10.5.1.4	O	TLV	7-10
26	List of Receive N-PDU Numbers	Receive N-PDU Number list 10.5.5.11	O	TLV	4 - 19
17	Negotiated READY timer value	GPRS Timer 10.5.7.3	O	TV	2
25	GMM cause	GMM cause 10.5.5.14	O	TV	2
2A	T3302 value	GPRS Timer 2 10.5.7.4	O	TLV	3
8C	Cell Notification	Cell Notification 10.5.5.21	O	T	1
4A	Equivalent PLMNs	PLMN List 10.5.1.13	O	TLV	5-17
32	PDP context status	PDP context status 10.5.7.1	O	TLV	4
B-	Network feature support	Network feature support 10.5.5.23	O	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 [a combined GPRS routing area updating procedure](#) ~~IMSI attach~~ was ~~not~~-successful for ~~non~~-GPRS services ~~only~~ [during a combined GPRS routing area updating procedure](#).

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.

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

CR-Form-v7

CHANGE REQUEST⌘ **24.008 CR 753** ⌘ rev **3** ⌘ Current version: **3.15.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Bearer Capability IE
Source:	⌘ Ericsson
Work item code:	⌘ TEI Date: ⌘ 04/04/2003
Category:	⌘ F Release: ⌘ R99
<p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> <p>Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)</p>	

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.

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 negotiate 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 octet 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 B.1.3.2.3. 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 B.1.3.2.3. 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. However, 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 results 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 requested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is contained 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: ⌘ 10.5.4.5

Other specs affected:	⌘	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table>	Y	N		X		X		X	Other core specifications Test specifications O&M Specifications	⌘
Y	N											
	X											
	X											
	X											

Other comments: ⌘

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/>. For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, if 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 24: 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).~~

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

CR-Form-v7
CHANGE REQUEST
⌘ 24.008 CR 754 ⌘ rev 3 ⌘ Current version: 4.10.0 ⌘

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

Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Bearer Capability IE		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI4	Date:	⌘ 04/04/2003
Category:	⌘ A	Release:	⌘ Rel-4
	Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)

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. 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 results 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 requested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is contained in the octet 6f, mandated to be included 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:	⌘	10.5.4.5								
Other specs affected:	⌘	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </tbody> </table>	Y	N		X		X		X
Y	N									
	X									
	X									
	X									
Other comments:	⌘									

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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 irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, if 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 24: 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).~~

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

CR-Form-v7
CHANGE REQUEST
⌘ 24.008 CR 755 ⌘ rev 3 ⌘ Current version: 5.7.0 ⌘

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

Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Bearer Capability IE
Source:	⌘ Ericsson
Work item code:	⌘ TEI5 Date: ⌘ 04/04/2003
Category:	⌘ A Release: ⌘ Rel-5 Use <u>one</u> of the following categories: F (correction) 2 (GSM Phase 2) A (corresponds to a correction in an earlier release) R96 (Release 1996) B (addition of feature), R97 (Release 1997) C (functional modification of feature) R98 (Release 1998) D (editorial modification) R99 (Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900 . Rel-5 (Release 5) Rel-6 (Release 6)

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. 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 A/Gb mode call control requirements also if it is requesting for a service in lu mode except for the exception specified in the old note 5 (A terminal not supporting any of the GSM frequency bands). 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 results 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 requested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is contained 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:	⌘	10.5.4.5								
Other specs affected:	⌘	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input type="checkbox"/></td> </tr> </tbody> </table> Other core specifications Test specifications O&M Specifications	Y	N	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Y	N									
<input checked="" type="checkbox"/>	<input type="checkbox"/>									
<input checked="" type="checkbox"/>	<input type="checkbox"/>									
<input checked="" type="checkbox"/>	<input type="checkbox"/>									
Other comments:	⌘									

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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
	Length of the bearer capability contents								octet 2
0/1 ext	radio channel requirement		co-ding std	trans fer mode	information transfer capability				octet 3
0/1 ext	0 co-ding	CTM	0 spare	speech version indication				octet 3a*	
0/1 ext	0 co-ding	0 spare	0 spare	speech version indication				octet 3b etc*	
1 ext	comp-ress.	structure		dupl. mode	confi gur.	NIRR	esta-bli.	octet 4*	
0/1 ext	0 access id.	0	rate adaption		signalling access protocol			octet 5*	
0/1 ext	Other ITC		Other rate adaption		0	0	0	octet 5a*	
1 ext	Hdr/noHdr	Multi frame	Mode	LLI	Assig nor/e	Inb. neg	0 Spare	octet 5b*	
0/1 ext	0 layer 1 id.	1	User information layer 1 protocol				sync/ async	octet 6*	
0/1 ext	numb. stop bits	nego-tia-tion	numb. data bits	user rate				octet 6a*	
0/1 ext	intermed. rate		NIC on TX	NIC on RX	Parity			octet 6b*	
0/1 ext	connection element		modem type					octet 6c*	
0/1 ext	Other modem type		Fixed network user rate					octet 6d*	
0/1 ext	Acceptable channel codings				Maximum number of traffic channels				octet 6e*
0/1 ext	UIMI			Wanted air interface user rate					octet 6f*
1 ext	Acceptable channel codings extended			Asymmetry Indication		0	0	octet 6g*	
1 ext	1 layer 2 id.	0	User information layer 2 protocol					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 information element according to [A/Gb mode GSM](#) call control requirements also if it is requesting for a [UMTS](#) service [in Iu mode, with the following exceptions:-](#)

1. 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 Iu mode access the following parameters ~~are~~ irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, if 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 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 inter-system 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).~~

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

CR-Form-v7

CHANGE REQUEST⌘ **24.008 CR 756** ⌘ rev **3** ⌘ Current version: **6.0.0** ⌘For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.Proposed change affects: UICC apps ⌘ ME Radio Access Network Core Network

Title:	⌘ Bearer Capability IE		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI6 Date: ⌘ 04/04/2003		
Category:	⌘ A Release: ⌘ Rel-6		
	<table border="0"> <tr> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="vertical-align: top;"> <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </td> </tr> </table>	<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>
<p>Use <u>one</u> of the following categories:</p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p>		

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.
	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 A/Gb mode call control requirements also if it is requesting for a service in lu mode 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 results 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 requested by this kind of terminals, because the octet 6e is needed in order to include the Wanted Air Interface User Rate (WAIUR), which is contained in the octet 6f, mandated to be included 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:	⌘	10.5.4.5								
Other specs affected:	⌘	<table border="1"> <thead> <tr> <th>Y</th> <th>N</th> </tr> </thead> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Y	N	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Y	N									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									
Other comments:	⌘									

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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.

	Bearer capability IEI							octet 1
	Length of the bearer capability contents							octet 2
0/1 ext	radio channel requirement		co-ding std	trans fer mode	information transfer capability			octet 3
0/1 ext	0 co-ding	CTM	0 spare	speech version indication			octet 3a*	
0/1 ext	0 co-ding	0 spare	0 spare	speech version indication			octet 3b etc*	
1 ext	comp-ress.	structure		dupl. mode	confi gur.	NIRR	esta-bli.	octet 4*
0/1 ext	0 access id.	0	rate adaption		signalling access protocol			octet 5*
0/1 ext	Other ITC		Other rate adaption		0	0	0 Spare	octet 5a*
1 ext	Hdr/noHdr	Multi frame	Mode	LLI	Assig nor/e	Inb. neg	0 Spare	octet 5b*
0/1 ext	0 layer 1 id.	1	User information layer 1 protocol				sync/ async	octet 6*
0/1 ext	numb. stop bits	nego-tia-tion	numb. data bits	user rate				octet 6a*
0/1 ext	intermed. rate		NIC on TX	NIC on RX	Parity			octet 6b*
0/1 ext	connection element		modem type					octet 6c*
0/1 ext	Other modem type		Fixed network user rate					octet 6d*
0/1 ext	Acceptable channel codings				Maximum number of traffic channels			octet 6e*
0/1 ext	UIMI			Wanted air interface user rate				octet 6f*
1 ext	Acceptable channel codings extended			Asymmetry Indication		0	0 Spare	octet 6g*
1 ext	1 layer 2 id.	0	User information layer 2 protocol					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 [A/Gb mode GSM](#) call control requirements also if it is requesting for a [UMTS](#)-service [in Iu mode, with the following exceptions:-](#)

1. 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 Iu mode access the following parameters ~~are~~ irrelevant for specifying the radio access bearer, because multiple traffic channels (multislot) are not deployed [3GPP TS 23.034]. However, if 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 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 inter-system 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):~~

CHANGE REQUEST

⌘ **24.008** CR **761** ⌘ rev **1** ⌘ Current version: **3.15.0** ⌘

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

Proposed change affects: UICC apps⌘ ME Radio Access Network Core Network

Title:	⌘ Provision of DNS server IPv6 address		
Source:	⌘ Ericsson		
Work item code:	⌘ TEI	Date:	⌘ 20/05/2003
Category:	⌘ F	Release:	⌘ R99
Use <i>one</i> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <i>one</i> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)	

Reason for change:	⌘ The possibility to provide the MS with DNS server IPv6 addresses is limited, due to the limited possibilities (provided by RFCs) compared to IPv4 options. The proposed method is already standardised from rel-5 onwards. SA2 has discussed the topic, and asks CN1 to align R99 and R4 with R5 on the topic (see inc LS N1-030538), as SA2 think this is an essential correction. Note that no change is needed to the stage 2 specifications.
Summary of change:	⌘ In order to get a uniform method to provide the MS with DNS server IPv6 address from introduction of IPv6, the already approved method from rel-5 is introduced from the introduction of IPv6 (Rel-99 or Rel-4 depending on when operators launch IPv6).
Consequences if not approved:	⌘ Network provided configuration of DNS server IPv6 address is not possible in a uniform way from the launch of IPv6

Clauses affected:	⌘ 2, 10.5.6.3										
Other specs affected:	<table border="1"> <tr> <td>Y</td> <td>N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	⌘ 27.060 (CR no. 082) 29.061 (CR no. 084)	
Y	N										
X											
	X										
	X										
Other comments:	⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

*** 1st 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 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".
- [44] ITU-T Recommendation E.163: "Numbering plan for the international telephone service".
- [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 point-to-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)".
- [66] ITU-T Recommendation X.31: "Support of packet mode terminal equipment by an ISDN".
- [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".
- [68] ITU-T Recommendation X.75 (1988): "Packet-switched signalling system between public networks providing data transmission services".
- [69] ITU-T Recommendation X.121: "International numbering plan for public data networks".
- [70] ETS 300 102-1: "Integrated Services Digital Network (ISDN); User-network interface layer 3; 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".
- [72] ISO/IEC 10646: "Universal Multiple-Octet Coded Character Set (UCS)"; UCS2, 16 bit coding.
- [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 03.64: "General Packet Radio Service (GPRS); Overall description of the GPRS radio 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 (SNDCCP)".
- [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".
- [83] 3GPP TS 04.18: "Mobile radio interface layer 3 specification, Radio Resource Control Protocol".
- [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"](#).

**** 2nd 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 ~~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.

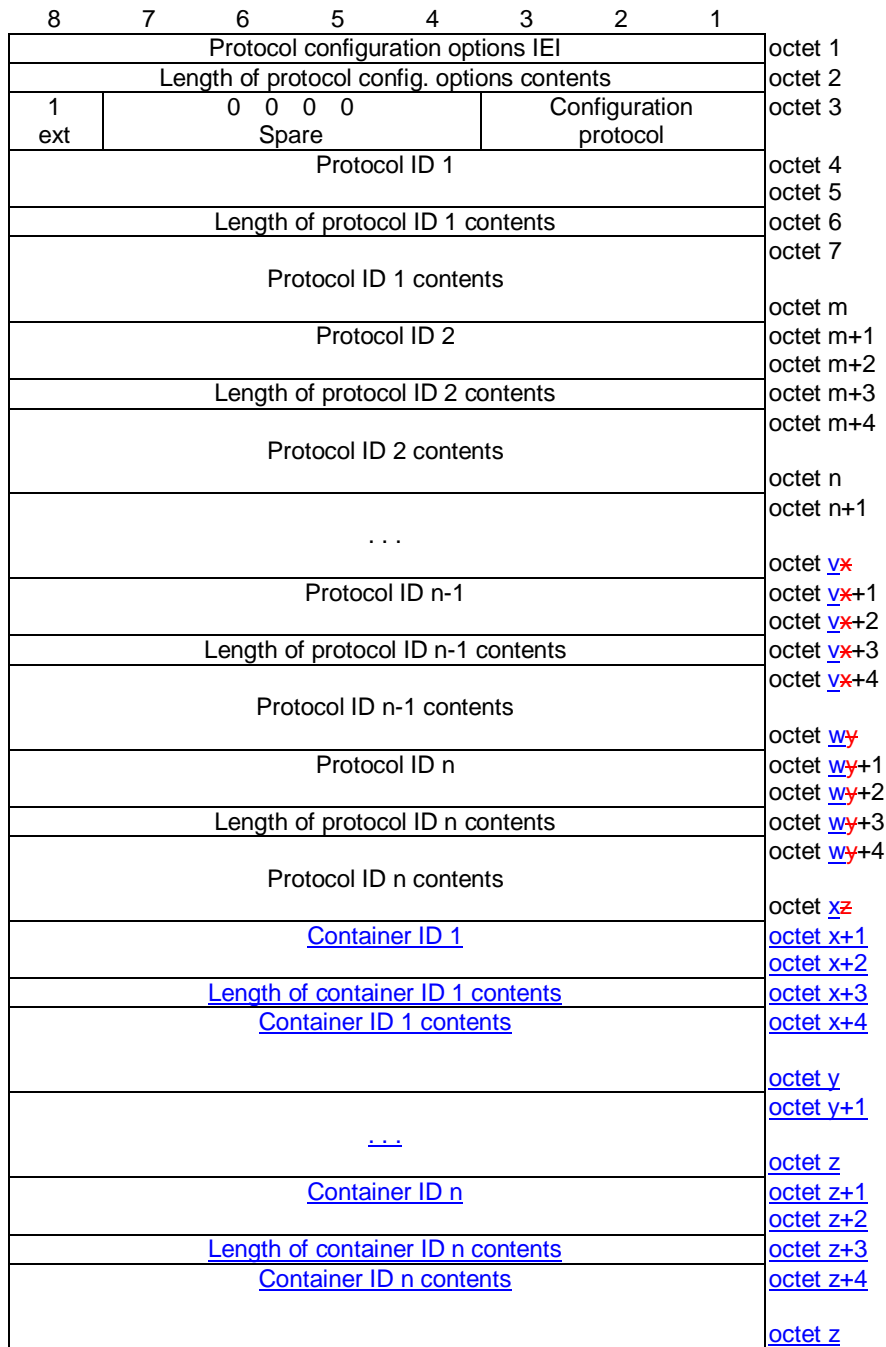


Figure 10.5.136/3GPP TS 24.008: *Protocol configuration options* information element

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

<p>Configuration protocol (octet 3)</p> <p>Bits</p> <p>3 2 1</p> <p>0 0 0 PPP for use with IP PDP type</p> <p>All other values are interpreted as PPP in this version of the protocol.</p> <p><u>After octet 3, i.e. from octet 4 to octet z, two logical lists are defined:</u></p> <ul style="list-style-type: none"> - <u>the Configuration protocol options list (octets 4 to x), and</u> - <u>the Additional parameters list (octets x+1 to z).</u> <p>Configuration protocol options list (octets 4 to <u>xz</u>)</p> <p>The <i>configuration protocol options list</i> contains a variable number of logical units, they may occur in an arbitrary order within the <i>configuration protocol options list</i>.</p> <p>Each unit is of variable length and consists of a:</p> <ul style="list-style-type: none"> - protocol identifier (2 octets); - the length of the protocol identifier contents of the unit (1 octet); and - the protocol identifier contents itself (n octets). <p>The <i>protocol identifier</i> field contains the hexadecimal coding of the configuration protocol identifier. Bit 8 of the first octet of the <i>protocol identifier</i> field contains the most significant bit and bit 1 of the second octet of the <i>protocol identifier</i> field contains the least significant bit.</p> <p>If the <i>configuration protocol options list</i> contains a protocol identifier that is not supported by the receiving entity the corresponding unit shall be discarded.</p> <p>The <i>length of the protocol identifier contents</i> field contains the binary coded representation of the length of the <i>protocol identifier contents</i> field of a unit. The first bit in transmission order is the most significant bit.</p> <p>The <i>protocol identifier contents</i> field of each unit contains information specific to the configuration protocol specified by the <i>protocol identifier</i>.</p> <p>PPP</p> <p>At least the following protocol identifiers (as defined in RFC 32324709 [94]) shall be supported in this version of the protocol:</p> <ul style="list-style-type: none"> - C021H (LCP); - C023H (PAP); - C223H (CHAP); and - 8021H (IPCP). <p>The support of other protocol identifiers is implementation dependent and outside the scope of the present document.</p> <p>The <i>protocol identifier contents</i> field of each unit corresponds to a "Packet" as defined in RFC 1661 [93] that is stripped off the "Protocol" and the "Padding" octets.</p> <p>The detailed coding of the <i>protocol identifier contents</i> field is specified in the RFC that is associated with the protocol identifier of that unit.</p> <p><u>Additional parameters list (octets x+1 to z)</u></p> <p><u>The <i>additional parameters list</i> 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 <i>configuration protocol options list</i>.</u></p>

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

⌘ **24.008** CR **762** ⌘ rev **1** ⌘ Current version: **4.10.0** ⌘

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

Proposed change affects: UICC apps ME Radio Access Network Core Network

Title:	⌘ Provision of DNS server IPv6 address		
Source:	⌘ Ericsson		
Work item code:	⌘ IMS-CCR TEI	Date:	⌘ 20/05/2003
Category:	⌘ A	Release:	⌘ Rel-4
Use <u>one</u> of the following categories: F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6)	

Reason for change:	⌘ The possibility to provide the MS with DNS server IPv6 addresses is limited, due to the limited possibilities (provided by RFCs) compared to IPv4 options. The proposed method is already standardised from rel-5 onwards. SA2 has discussed the topic, and asks CN1 to align R99 and R4 with R5 on the topic (see inc LS N1-030538), as SA2 think this is an essential correction. Note that no change is needed to the stage 2 specifications.
Summary of change:	⌘ In order to get a uniform method to provide the MS with DNS server IPv6 address from introduction of IPv6, the already approved method from rel-5 is introduced from the introduction of IPv6 (Rel-99 or Rel-4 depending on when operators launch IPv6).
Consequences if not approved:	⌘ Network provided configuration of DNS server IPv6 address is not possible in a uniform way from the launch of IPv6

Clauses affected:	⌘ 2, 10.5.6.3										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td>X</td> <td></td> </tr> <tr> <td></td> <td>X</td> </tr> <tr> <td></td> <td>X</td> </tr> </table> Other core specifications Test specifications O&M Specifications	Y	N	X			X		X	⌘ 27.060 (CR no. 083) 29.061 (CR no. 085)	
Y	N										
X											
	X										
	X										
Other comments:	⌘										

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at <http://www.3gpp.org/specs/CR.htm>. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

**** 1st 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".
- [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 point-to-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".
- [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] 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 (SNDTCP)".
- [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".](#)

**** 2nd 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 ~~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.

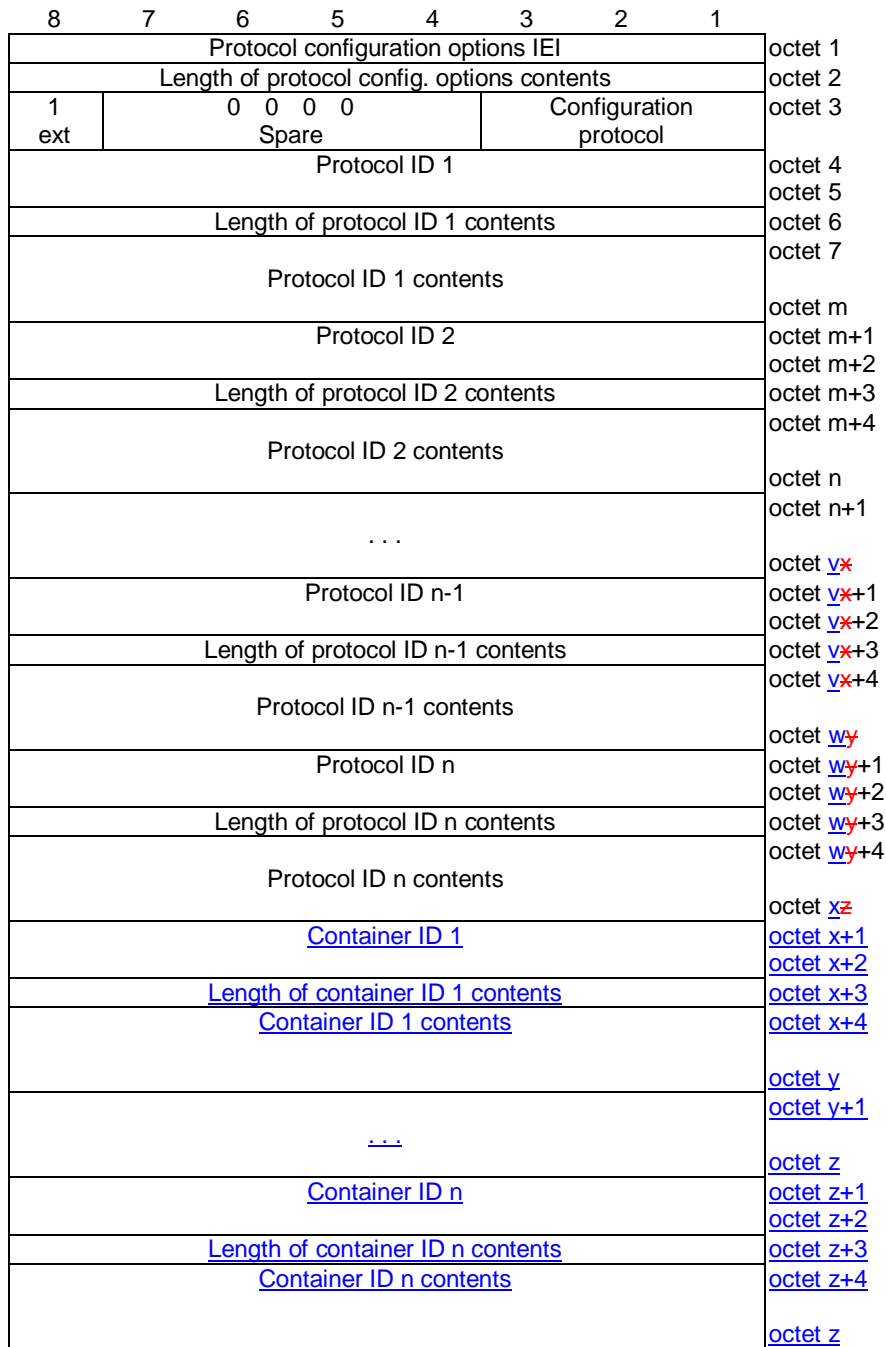


Figure 10.5.136/3GPP TS 24.008: *Protocol configuration options* information element

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

<p>Configuration protocol (octet 3)</p> <p>Bits</p> <p>3 2 1</p> <p>0 0 0 PPP for use with IP PDP type</p> <p>All other values are interpreted as PPP in this version of the protocol.</p> <p><u>After octet 3, i.e. from octet 4 to octet z, two logical lists are defined:</u></p> <ul style="list-style-type: none"> - <u>the Configuration protocol options list (octets 4 to x), and</u> - <u>the Additional parameters list (octets x+1 to z).</u> <p>Configuration protocol options list (octets 4 to xz)</p> <p>The <i>configuration protocol options list</i> contains a variable number of logical units, they may occur in an arbitrary order within the <i>configuration protocol options list</i>.</p> <p>Each unit is of variable length and consists of a:</p> <ul style="list-style-type: none"> - protocol identifier (2 octets); - the length of the protocol identifier contents of the unit (1 octet); and - the protocol identifier contents itself (n octets). <p>The <i>protocol identifier</i> field contains the hexadecimal coding of the configuration protocol identifier. Bit 8 of the first octet of the <i>protocol identifier</i> field contains the most significant bit and bit 1 of the second octet of the <i>protocol identifier</i> field contains the least significant bit.</p> <p>If the <i>configuration protocol options list</i> contains a protocol identifier that is not supported by the receiving entity the corresponding unit shall be discarded.</p> <p>The <i>length of the protocol identifier contents</i> field contains the binary coded representation of the length of the <i>protocol identifier contents</i> field of a unit. The first bit in transmission order is the most significant bit.</p> <p>The <i>protocol identifier contents</i> field of each unit contains information specific to the configuration protocol specified by the <i>protocol identifier</i>.</p> <p>PPP</p> <p>At least the following protocol identifiers (as defined in RFC 32324700 [95]) shall be supported in this version of the protocol:</p> <ul style="list-style-type: none"> - C021H (LCP); - C023H (PAP); - C223H (CHAP); and - 8021H (IPCP). <p>The support of other protocol identifiers is implementation dependent and outside the scope of the present document.</p> <p>The <i>protocol identifier contents</i> field of each unit corresponds to a "Packet" as defined in RFC 1661 [94] that is stripped off the "Protocol" and the "Padding" octets.</p> <p>The detailed coding of the <i>protocol identifier contents</i> field is specified in the RFC that is associated with the protocol identifier of that unit.</p> <p><u>Additional parameters list (octets x+1 to z)</u></p> <p><u>The <i>additional parameters list</i> 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 <i>configuration protocol options list</i>.</u></p>

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*).