

Source: TSG CN WG 1

Title: CRs to Rel-5 on Work Item IMS-CCR towards 24.008 and 24.229

Agenda item: 8.1

Document for: APPROVAL

Introduction:

This document contains 2 CRs on **Rel-5** to Work Item "IMS-CCR", that have been agreed by **TSG CN WG1**, and are forwarded to TSG CN Plenary meeting #17 for approval.

The 2 CRs have corresponding CRs in 3GPP TS 27.060 and 3GPP TS 29.061 (CN3). Also related to LS to CN#17 (N1-021834) and corresponding response from SA2.

Spec	CR #	Rev	CAT	Rel	Tdoc Title	Meeting	TDoc #	C_Version
24.008	669		F	Rel-5	Request for DNS IPv6 server address	N1-25	N1-021678	5.4.0
24.229	177	2	F	Rel-5	Request for DNS IPv6 server address	N1-25	N1-021833	5.1.0

CR-Form-v7

CHANGE REQUEST

⌘ **24.008 CR 669** ⌘ rev **-** ⌘ Current version: **5.4.0** ⌘

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:	⌘ Request for DNS IPv6 server address		
Source:	⌘ Ericsson		
Work item code:	⌘ IMS-CCR	Date:	⌘ 22/07/2002
Category:	⌘ F	Release:	⌘ REL-5
	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:	⌘ As the progress of draft-ietf-ipv6-dns-discovery-05.txt and draft-ietf-pppext-ipv6-dns-addr-00.txt are not predictable, it may be a risk that these drafts do not reach RFC status in REL-5 timeframe.
Summary of change:	⌘ As an alternative to internet-drafts, it is proposed to allow the use of the PCO IE to request DNS IPv6 server address(es).
Consequences if not approved:	⌘ IPv6 stateless DNS discovery will not be possible.

Clauses affected:	⌘ 2, 10.5.6.3										
Other specs Affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td style="text-align: center;"></td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> <tr> <td style="text-align: center;"></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 24.229, 27.060, 29.061
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

How to create CRs using this form:

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- 1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

***** **First 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: " Digital cellular telecommunications system (Phase 2+); Security aspects".
- [6] 3GPP TS 22.011: " Digital cellular telecommunications system (Phase 2+); Service accessibility".
- [7] 3GPP TS 42.017: " Digital cellular telecommunications system (Phase 2+); Subscriber Identity Modules (SIM); Functional characteristics".
- [8] 3GPP TS 02.40: "Digital cellular telecommunications system (Phase 2+); Procedures for call progress indications".
- [9] 3GPP TS 03.01: "Digital cellular telecommunications system (Phase 2+); Network functions".
- [10] 3GPP TS 23.003: "Digital cellular telecommunications system (Phase 2+); Numbering, addressing and identification".
- [11] 3GPP TS 43.013: "Digital cellular telecommunications system (Phase 2+); Discontinuous Reception (DRX) in the GSM system".
- [12] 3GPP TS 23.014: "Digital cellular telecommunications system (Phase 2+); Support of Dual Tone Multi-Frequency (DTMF) signalling".
- [12a] Void.
- [13] 3GPP TS 43.020: "Digital cellular telecommunications system (Phase 2+); 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: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Station System (MS - BSS) interface; Channel structures and access capabilities".
- [17] 3GPP TS 44.004: "Digital cellular telecommunications system (Phase 2+); Layer 1; General requirements".

- [18] 3GPP TS 44.005: "Digital cellular telecommunications system (Phase 2+); Data Link (DL) layer; General aspects".
- [19] 3GPP TS 44.006: "Digital cellular telecommunications system (Phase 2+); Mobile Station - Base Station System (MS - BSS) interface; Data Link (DL) layer specification".
- [20] 3GPP TS 24.007: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface signalling layer 3; General aspects".
- [21] 3GPP TS 24.010: "Digital cellular telecommunications system ; 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 24.071: "Digital cellular telecommunications system (Phase 2+); Mobile radio interface layer 3 location services specification."
- [23b] 3GPP TS 44.031 "Digital cellular telecommunication system (Phase 2+); Location Services LCS); Mobile Station (MS) - Serving Mobile Location Centre (SMLC); Radio Resource LCS Protocol (RRLP)".
- [23c] 3GPP TS 25.331: "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; Radio Resource Control (RRC) protocol specification"
- [24] 3GPP TS 24.080: "Digital cellular telecommunications system (Phase 2+); Mobile radio Layer 3 supplementary service specification; Formats and coding".
- [25] 3GPP TS 24.081: "Digital cellular telecommunications system (Phase 2+); Line identification supplementary services; Stage 3".
- [26] 3GPP TS 24.082: "Digital cellular telecommunications system (Phase 2+); Call Forwarding (CF) supplementary services; Stage 3".
- [27] 3GPP TS 24.083: "Digital cellular telecommunications system (Phase 2+); Call Waiting (CW) and Call Hold (HOLD) supplementary services; Stage 3".
- [28] 3GPP TS 24.084: "Digital cellular telecommunications system (Phase 2+); MultiParty (MPTY) supplementary services; Stage 3".
- [29] 3GPP TS 24.085: "Digital cellular telecommunications system (Phase 2+); Closed User Group (CUG) supplementary services; Stage 3".
- [30] 3GPP TS 24.086: "Digital cellular telecommunications system (Phase 2+); 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: "Digital cellular telecommunications system (Phase 2+); Multiplexing and multiple access on the radio path".
- [33] 3GPP TS 45.005: "Digital cellular telecommunications system (Phase 2+); Radio transmission and reception".
- [34] 3GPP TS 45.008: "Digital cellular telecommunications system (Phase 2+); Radio subsystem link control".
- [35] 3GPP TS 45.010: "Digital cellular telecommunications system (Phase 2+); 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: "Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification".
- [38] 3GPP TS 29.007: "Digital cellular telecommunications system (Phase 2+); 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: "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) conformance specification".
- [40] 3GPP TS 51.021: "Digital cellular telecommunications system (Phase 2); 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 Alphabet No. 5".
- [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: "Digital cellular telecommunications system (Phase 2+); General Packet Radio Service (GPRS); Overall description of the GPRS radio interface; Stage 2".
- [76] 3GPP TS 44.060: "Digital cellular telecommunications system (Phase 2+); 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: "Digital cellular telecommunications system (Phase 2+); Mobile Station (MS) - Serving GPRS Support Node (SGSN); Subnetwork Dependent Convergence Protocol (SNDCCP)".
- [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: " Digital cellular telecommunications system (Phase 2+); Functions related to Mobile Station (MS) in idle mode and group receive 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"
- [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 23.226: "Global Text Telephony; Stage 2 "
- [93] 3GPP TS 26.226: "Cellular Text Telephone Modem (CTM), General Description "
- [94] 3GPP TS 23.236: "Intra Domain Connection of RAN Nodes to Multiple CN Nodes"
- [95] 3GPP TS 24.229: "3rd Generation Partnership Project; Technical Specification Group Core Network; IP Multimedia Call Control Protocol based on SIP and SDP"
- [96] 3GPP TS 23.205: "3rd Generation Partnership Project; Technical Specification Group Core Network; Bearer-independent circuit-switched core network; Stage 2".
- [97] 3GPP TS 23.172: "UDI/RDI Fallback and Service Modification; Stage 2".
- [98] 3GPP TS 25.304: "3rd Generation Partnership Project; Technical Specification Group Radio Access Network; UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode"
- [99] RFC 2373 (July 1998): " IP Version 6 Addressing Architecture".

***** **Second 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, and
- transfer additional parameters and/or requests (such as, P-CSCF Address Request; 3GPP TS 24.229 [95]) that may serve any purpose other than defining network protocol options.

The *protocol configuration options* is a type 4 information element with a minimum length of 2 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.

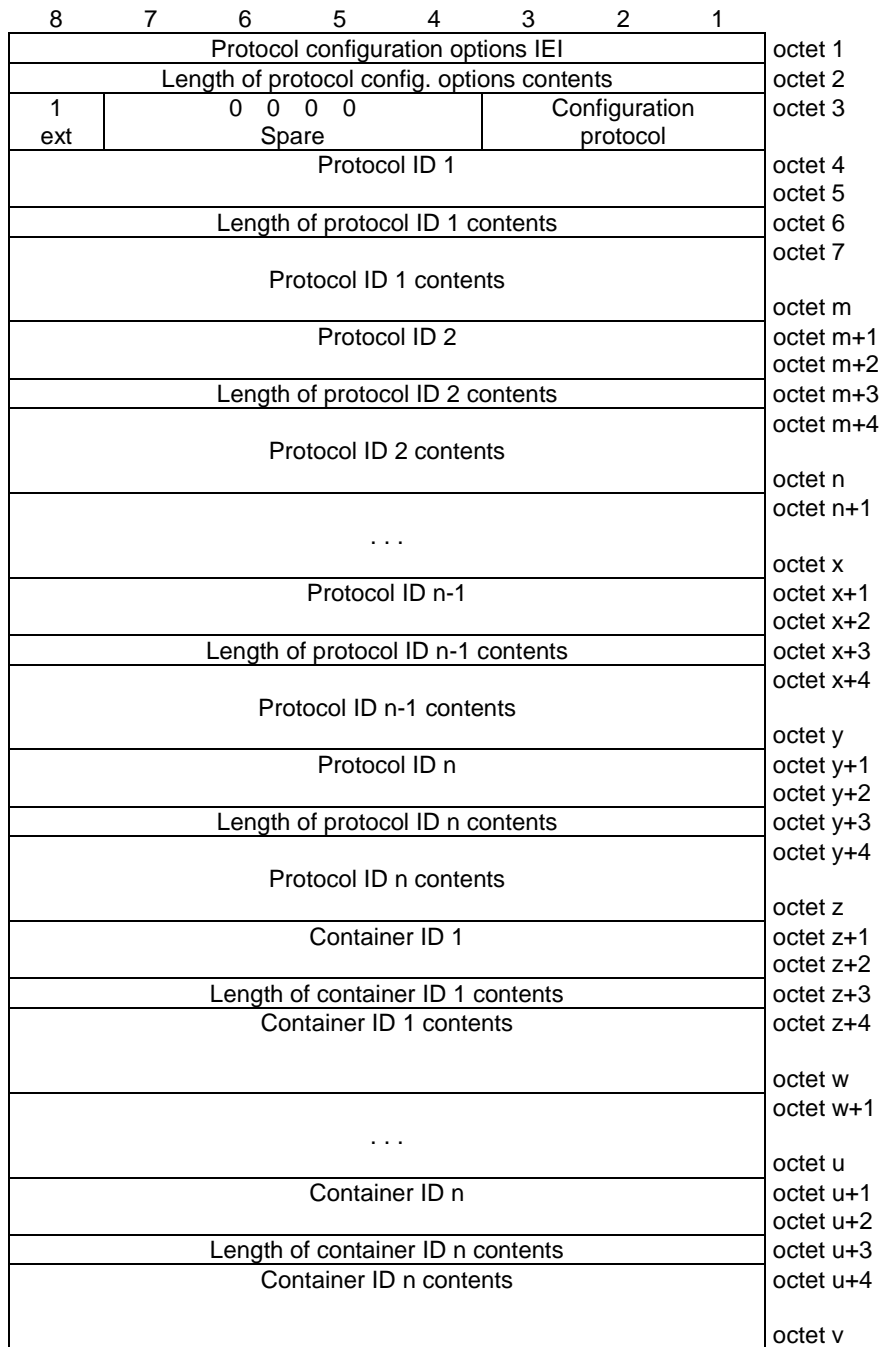


Figure 10.5.136/3GPP TS 24.008: *Protocol configuration options* information element

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

<p>Configuration protocol (octet 3)</p> <p>Bits 3 2 1 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>After octet 3, i.e. from octet 4 to octet v, two logical lists are defined:</p> <ul style="list-style-type: none"> - the Configuration protocol options list (octets 4 to z), and - the Additional parameters list (octets z+1 to v). <p>Configuration protocol options list (octets 4 to z)</p> <p>The <i>configuration protocol options list</i> contains a variable number of logical units, the 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 1700) 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 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>Additional parameters list (octets z+1 to v)</p> <p>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>.</p> <p>The <i>additional parameters list</i> contains a list of special parameters, each one in a separate container. The type of the parameter carried in a container is identified by</p>
--

a specific *container identifier*. In this version of the protocol, the following container identifiers are specified:

MS to network direction:

- 0001H (P-CSCF Address Request);
- 0002H (IM CN Subsystem Signaling Flag)
- 0003H (DNS Server Address Request).

Network to MS direction:

- 0001H (P-CSCF Address)
- 0002H (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 P-CSCF Address, the *container identifier contents* field contains one IPv6 address corresponding to a P-CSCF address (see 3GPP TS 24.229 [95]). This IPv6 address is encoded as an 128-bit address according to RFC 2373 [99] (~~IP version 6 addressing architecture~~). When there is need to include more than one P-CSCF address, then more logical units with *container identifier* indicating P-CSCF Address are used.

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 an 128-bit address according to RFC 2373 [99]. 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.

When the *container identifier* indicates P-CSCF Address Request or 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 IM CN Subsystem Signaling Flag (see 3GPP TS 24.229 [95]), 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.

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*).

NOTE 2: The *additional parameters list* is discarded by a receiver, which does not support this list (e.g. a R99 GGSN).

CR-Form-v7

CHANGE REQUEST

⌘ **24.229 CR 177** ⌘ rev **2** ⌘ Current version: **5.1.0** ⌘

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

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

Title:	⌘ Request for DNS IPv6 server address		
Source:	⌘ Ericsson		
Work item code:	⌘ IMS-CCR	Date:	⌘ 01/08/2002
Category:	⌘ F	Release:	⌘ REL-5
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:
	F (correction)	2	(GSM Phase 2)
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	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 stateless autoconfiguration, the UE should use RFC 2462 and draft-ietf-ipv6-dns-discovery-05.txt or draft-ietf-pppext-ipv6-dns-addr-00.txt to acquire the IPv6 address(es) for DNS server(s). As the ready date of the mentioned internet-drafts are not defined, it may be a risk that these drafts do not reach RFC status in REL-5 timeframe.
Summary of change:	⌘ As an alternative to draft-ietf-ipv6-dns-discovery-05.txt or draft-ietf-pppext-ipv6-dns-addr-00.txt, it is proposed to allow the use of the PCO IE to request DNS server address(es).
Consequences if not approved:	⌘ IPv6 stateless DNS discovery for IMS will not be possible.

Clauses affected:	⌘ 2, 9.2.1										
Other specs affected:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">Y</td> <td style="width: 20px; text-align: center;">N</td> </tr> <tr> <td style="text-align: center;">X</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> <tr> <td></td> <td style="text-align: center;">X</td> </tr> </table>	Y	N	X			X		X	Other core specifications	⌘ 24.008, 27.060, 29.061
Y	N										
X											
	X										
	X										
		Test specifications									
		O&M Specifications									
Other comments:	⌘										

How to create CRs using this form:

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***** First modification *****

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- [1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".
- [2] 3GPP TS 23.002: "Network architecture".
- [3] 3GPP TS 23.003: "Numbering, addressing and identification".
- [4] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [5] 3GPP TS 23.218: "IP Multimedia (IM) Session Handling; IM call model".
- [6] 3GPP TS 23.221: "Architectural requirements".
- [7] 3GPP TS 23.228: "IP multimedia subsystem; Stage 2".
- [8] 3GPP TS 24.008: "Mobile radio interface layer 3 specification; Core Network protocols; Stage 3".
- [9] 3GPP TS 25.304: "UE Procedures in Idle Mode and Procedures for Cell Reselection in Connected Mode".
- [10] 3GPP TS 26.235: "Packet switched conversational multimedia applications; Default codecs".
- [10A] 3GPP TS 27.060: "Mobile Station (MS) supporting Packet Switched Services".
- [11] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting Packet Based Services and Packet Data Networks (PDN)".
- [12] 3GPP TS 29.207: "Policy control over Go interface".
- [13] 3GPP TS 29.208: "End to end Quality of Service (QoS) signalling flows".
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***** Second modification *****

9 GPRS aspects when connected to the IM CN subsystem

9.1 Introduction

A UE accessing the IM CN subsystem, and the IM CN subsystem itself, utilise the services provided by GPRS to provide packet-mode communication between the UE and the IM CN subsystem.

Requirements for the UE on the use of these packet-mode services are specified in this clause. Requirements for the GGSN in support of this communication are specified in 3GPP TS 29.061 [11] and 3GPP TS 29.207 [12].

9.2 Procedures at the UE

9.2.1 PDP context activation and P-CSCF discovery

Prior to communication with the IM CN subsystem, the UE shall:

- a) perform a GPRS attach procedure;
- b) establish a PDP context used for SIP signalling according to the APN and GGSN selection criteria described in 3GPP TS 23.060 [4] and 3GPP TS 27.060 [10A]. This PDP context shall remain active throughout the period the UE is connected to the IM CN subsystem, i.e. from the initial registration and at least until the deregistration. As a result, the PDP context provides the UE with information that makes the UE able to construct an IPv6 address;

The UE shall choose one of the following options when performing establishment of this PDP context:

I. A dedicated PDP context for SIP signalling:

The UE shall indicate to the GGSN that this is a PDP context intended to carry IM CN subsystem-related signalling only by setting the IM CN Subsystem Signalling Flag within the Protocol Configuration Options IE at PDP Context activation. The UE may also use this PDP context for DNS and DHCP signalling according to the static packet filters described in 3GPP TS 29.207 [12];

II. A general-purpose PDP context:

The UE may decide to use a general purpose PDP Context to carry IM CN subsystem-related signaling. The UE shall indicate to the GGSN that this is a general-purpose PDP context by not setting the IM CN Subsystem Signalling Flag within the Protocol Configuration Options IE;

NOTE 1: A general purpose PDP Context is completely IM CN subsystem-unaware, and as such, it does not have any IM CN subsystem-specific mechanisms applied to it.

NOTE 2: A general purpose PDP Context may carry both IM CN subsystem signaling and media, in case the media does not need to be authorized by Service Based Local Policy mechanisms defined in 3GPP TS 29.207 [12] and the media component is not mandated by the P-CSCF to be carried in a separate PDP Context.

c) acquire a P-CSCF address(es).

The methods for P-CSCF discovery are:

I. Employ Dynamic Host Configuration Protocol for IPv6 (DHCPv6) draft-ietf-dhc-dhcpv6 [40], the DHCPv6 options for SIP servers draft-ietf-sip-dhcpv6 [41] and if needed DNS after PDP context activation.

The UE shall either:

- in the DHCP query, request a list of SIP server domain names of P-CSCF(s) and the list of Domain Name Servers (DNS); or
- request a list of SIP server IPv6 addresses of P-CSCF(s).

II. Transfer P-CSCF address(es) within the PDP context activation procedure.

The UE shall indicate the request for a P-CSCF address to the GGSN within the Protocol Configuration Options IE of the ACTIVATE PDP CONTEXT REQUEST message or ACTIVATE SECONDARY PDP CONTEXT REQUEST message.

If the GGSN provides the UE with a list of P-CSCF IPv6 addresses in the ACTIVATE PDP CONTEXT ACCEPT message or ACTIVATE SECONDARY PDP CONTEXT ACCEPT message, the UE shall assume that the list is prioritised with the first address within the Protocol Configuration Options IE as the P-CSCF address with the highest priority.

The UE can freely select method I or II for P-CSCF discovery. In case several P-CSCF addresses are provided to the UE, the selection of P-CSCF address shall be performed according to the resolution of host name as indicated in RFC 3261 [26]. If sufficient information for P-CSCF address selection is not available, selection of the P-CSCF address by the UE is implementation specific.

If the UE is designed to use I above, but receives P-CSCF address(es) according to II, then the UE shall either ignore the received address(es), or use the address(es) in accordance with II, and not proceed with the DHCP request according to I.

The UE may request a DNS Server IPv6 address(es) via draft-ietf-dhc-dhcpv6-26 [40] or by the Protocol Configuration Options IE when activating a PDP context according to 3GPP TS 27.060 [10A].

Detailed description of how the request and response for IPv6 address(es) for DNS server(s) and list of P-CSCF address(es) are carried in the Protocol Configuration Options IE is provided in 3GPP TS 24.008 [8].

9.2.2 Session management procedures

The existing procedures for session management as described in 3GPP TS 24.008 [8] shall apply while the UE is connected to the IM CN subsystem.

9.2.3 Mobility management procedures

The existing procedures for mobility management as described in 3GPP TS 24.008 [8] shall apply while the UE is connected to the IM CN subsystem.

9.2.4 Cell selection and lack of coverage

The existing mechanisms and criteria for cell selection as described in 3GPP TS 25.304 [9] and 3GPP TS 44.018 [20] shall apply while the UE is connected to the IM CN subsystem.

9.2.5 PDP contexts for media

During establishment of a session, the UE establishes data streams(s) for media related to the session. Such data stream(s) may result in activation of additional PDP context(s). Such additional PDP context(s) shall be established as secondary PDP contexts associated to the PDP context used for signalling.

The P-CSCF shall indicate to the UE in SIP/SDP if a separate PDP Context is required for a media component as per procedures defined in 3GPP TS 23.228 [7]. The UE shall establish an additional PDP context for a media component if so indicated by the P-CSCF.

The UE shall pass the authorisation token received from the P-CSCF in the 183 (Session Progress) response to an INVITE request at originating setup or in the INVITE request at terminating setup to the GGSN by inserting it within the Traffic Flow Template IE at PDP Context activation/modification.

In order to identify to the GGSN which flow(s) (identified by m-lines within the SDP) are to be transferred within a particular PDP context, the UE shall set the flow identifier(s) within the Traffic Flow Template IE at PDP Context activation modification. Detailed description of how the flow identifiers are constructed is provided in 3GPP TS 29.207 [12].

Detailed description of how the authorization token and flow identifiers are carried in the Traffic Flow Template IE is provided in 3GPP TS 24.008 [8].