3GPP TSG CN Plenary Meeting #17 **NP-020371**
4th - 6th September 2002. Biarritz, France.

Source: **TSG CN WG 1**

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

Agenda item: **8.1**

Document for: **APPROVAL**

Introduction:

This document contains **4** 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.

CR#668 has a corresponding CR in 3GPP TS 29.060.

Spec	CR #	Rev	CAT	Rel	Tdoc Title	Meeting	TDoc #	C_Version
24.008	668		F	Rel-5	Introduction of PCO in more session management messages	N1-25	N1-021674	5.4.0
24.008	670		F	Rel-5	Clean-up of text for the PCO-IE	N1-25	N1-021680	5.4.0
24.008	675		F	Rel-5	Indication of successful establishment of Signalling PDP context to the UE	N1-25	N1-021704	5.4.0
24.008	679	1	F	Rel-5	Coding of Authorization Token in Traffic Flow Template	N1-25	N1-021840	5.4.0

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

Tdoc N1-021674

CR-Form-v7

CHANGE REQUEST

⌘ **24.008** **CR** **668** ⌘ **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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Introduction of PCO in more session management messages
Source:	⌘	Ericsson, Nokia
Work item code:	⌘	IMS-CCR
Date:	⌘	22/07/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one 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:	⌘	In CN1#24, the PCO-IE was introduced in more SM messages to prepare for future use. The PCO IE is now proposed introduced in most remaining SM messages. The PCO IE will then be a generic IE that can be used for UE-GGSN communication in future releases. By introducing this in most messages, the SM messages will be better prepared for coming services. The reason for introducing the IE in more SM messages is to avoid speculations when it comes to which messages that may or may not need any GGSN-UE communication. A generic text is provided to all subclauses describing the PCO-IE. A reference to 27.060 is made to show how the PCO-IE is used for PPP and IMS.
Summary of change:	⌘	The PCO IE is proposed introduced in more SM messages to introduce a generic container field.
Consequences if not approved:	⌘	Misunderstandings may occur during implementation.

Clauses affected:	⌘	2, 6.1.3.7(new), 9.5.7, 9.5.7.1(new), 9.5.8, 9.5.8.1(new), 9.5.9, 9.5.9.3(new), 9.5.11, 9.5.11.1(new), 9.5.14, 9.5.14.2(new), 9.5.15, 9.5.15.1(new)

Other specs affected:	Y	N			
⌘	X		Other core specifications	⌘	29.060
		X	Test specifications		
		X	O&M Specifications		

Other comments:	⌘	27.060 is planned updated by CN3 to give an overview of how to set up GPRS for IMS sessions.

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 modification **********

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 (SNDCP)".

[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"

********* 2nd modification *********

6.1.3.7 Protocol configuration options

The MS and the GGSN may communicate parameters by means of the protocol configuration options information element when activating, modifying or deactivating a PDP context. Such parameters can e.g be used to convey inrformation from external protocols between the MS and the GGSN. An overview of how the protocol configuration options information element is used is specified in 3GPP TS 27.060 [36a].

The protocol configuration options information element is transparent to the SGSN.

********* 3rd modification *********

9.5.7 Request PDP context activation

This message is sent by the network to the MS to initiate activation of a PDP context.
See table 9.5.7/3GPP TS 24.008.

Message type: REQUEST PDP CONTEXT ACTIVATION

Significance: global

Direction: network to MS

Table 9.5.7/3GPP TS 24.008: REQUEST PDP CONTEXT ACTIVATION message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Request PDP context activation message identity	Message type 10.4	M	V	1
	Offered PDP address	Packet data protocol address 10.5.6.4	M	LV	3 - 19
28	Access point name	Access point name 10.5.6.1	O	TLV	3 – 102
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.7.1 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 4th modification *********

9.5.8 Request PDP context activation reject

This message is sent by the MS to the network to reject initiation of a PDP context activation.
See table 9.5.8/3GPP TS 24.008.

Message type: REQUEST PDP CONTEXT ACTIVATION REJECT

Significance: global

Direction: MS to network

Table 9.5.8/3GPP TS 24.008: REQUEST PDP CONTEXT ACTIVATION REJECT message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Request PDP context act. reject message identity	Message type 10.4	M	V	1
	SM cause	SM cause 10.5.6.6	M	V	1
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.8.1 Protocol configuration options

This IE is included in the message when the MS wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the network.

********* 5th modification *********

9.5.9 Modify PDP context request (Network to MS direction)

This message is sent by the network to the MS to request modification of an active PDP context. See table 9.5.9/3GPP TS 24.008.

Message type: MODIFY PDP CONTEXT REQUEST (NETWORK TO MS DIRECTION)

Significance: global

Direction: network to MS

Table 9.5.9/3GPP TS 24.008: MODIFY PDP CONTEXT REQUEST (NETWORK TO MS DIRECTION) message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Modify PDP context request message identity	Message type 10.4	M	V	1
	Radio priority	Radio priority 10.5.7.2	M	V	1/2
	Spare half octet	Spare half octet 10.5.1.8	M	V	1/2
	Requested LLC SAPI	LLC service access point identifier 10.5.6.9	M	V	1
	New QoS	Quality of service 10.5.6.5	M	LV	13
2B	PDP address	Packet data protocol address 10.5.6.4	O	TLV	4-20
34	Packet Flow Identifier	Packet Flow Identifier 10.5.6.11	O	TLV	3
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.9.1 PDP address

If the MS requested external PDN address allocation at PDP context activation via an APN and this was confirmed by the network in the ACTIVATE PDP CONTEXT ACCEPT message, then the network shall include the PDP address IE in the MODIFY PDP CONTEXT REQUEST message once the address has been actually allocated, in order to update the PDP context in the MS.

9.5.9.2 Packet Flow Identifier

This IE may be included if the network wants to indicate the Packet Flow Identifier associated to the PDP context.

9.5.9.3 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 6th modification *********

9.5.11 Modify PDP context accept (MS to network direction)

This message is sent by the MS to the network to acknowledge the modification of an active PDP context. See table 9.5.11/3GPP TS 24.008.

Message type: MODIFY PDP CONTEXT ACCEPT (MS TO NETWORK DIRECTION)

Significance: global

Direction: MS to network

Table 9.5.11/3GPP TS 24.008: MODIFY PDP CONTEXT ACCEPT (MS TO NETWORK DIRECTION) message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Modify PDP context accept message identity	Message type 10.4	M	V	1
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.11.1 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 7th modification *********

9.5.14 Deactivate PDP context request

This message is sent to request deactivation of an active PDP context. See table 9.5.8/3GPP TS 24.008.

Message type: DEACTIVATE PDP CONTEXT REQUEST

Significance: global

Direction: both

Table 9.5.14/3GPP TS 24.008: DEACTIVATE PDP CONTEXT REQUEST message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Deactivate PDP context request message identity	Message type 10.4	M	V	1
	SM cause	SM cause 10.5.6.6	M	V	1
9-	Tear down indicator	Tear down indicator 10.5.6.10	O	TV	1
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.14.1 Tear down indicator

This IE is included in the message in order to indicate whether only the PDP context associated with this specific TI or all active PDP contexts sharing the same PDP address as the PDP context associated with this specific TI shall be deactivated.

9.5.14.2 Protocol configuration options

This IE is included in the message when the MS or the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the peer entity.

********* 8th modification *********

9.5.15 Deactivate PDP context accept

This message is sent to acknowledge deactivation of the PDP context requested in the corresponding *Deactivate PDP context request* message. See table 9.5.15/3GPP TS 24.008.

Message type: DEACTIVATE PDP CONTEXT ACCEPT

Significance: global

Direction: both

Table 9.5.15/3GPP TS 24.008: DEACTIVATE PDP CONTEXT ACCEPT message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	1/2
	Transaction identifier	Transaction identifier 10.3.2	M	V	1/2– 3/2
	Deactivate PDP context accept message identity	Message type 10.4	M	V	1
27	Protocol configuration options	Protocol configuration options 10.5.6.3	O	TLV	3 – 253

9.5.15.1 Protocol configuration options

This IE is included in the message when the MS or the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the peer entity.

3GPP TSG-CN1 Meeting #25 ***Tdoc N1-021680***
Helsinki, Finland, 29 July – 2 August

CR-Form-v7

CHANGE REQUEST

⌘ **24.008** **CR** **670** ⌘ **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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Clean-up of text for the PCO-IE
Source:	⌘	Ericsson
Work item code:	⌘	IMS-CCR
Date:	⌘	22/07/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
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Detailed explanations of the above categories can be found in 3GPP TR 21.900.

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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 text describing the usage of the protocol configuration options IE differs in various subclauses, even though no reason to describe this in different wordings can be found. A generic text is provided to all subclauses describing the PCO-IE.
Summary of change:	⌘	Clean-up of the text describing the PCO-IE.
Consequences if not approved:	⌘	Misunderstandings due to different wordings may occur during implementation.

Clauses affected:	⌘	9.5.1.2, 9.5.2.2, 9.5.3.1, 9.5.4.2, 9.5.5.2, 9.5.6.1, 9.5.1.2, 9.5.10.4, 9.5.12.5, 9.5.13.1, 10.5.6.3

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

Other comments:	⌘	

How to create CRs using this form:
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Below is a brief summary:

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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 modification *********

9.5.1.2 Protocol configuration options

This IE is included in the message when the MS wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the networkprovides protocol configuration options or other configuration parameters and/or requests (such as P-CSCF Address Request; see 3GPP TS 24.229 [95]) for the external PDN.

********* 2nd modification *********

9.5.2.2 Protocol configuration options

This IE is included in the message when the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MSprotocol configuration options or other configuration parameters (such as P-CSCF Addresses; see 3GPP TS 24.229 [95]) for the external PDN.

********* 3rd modification *********

9.5.3.1 Protocol configuration options

This IE ismay be included in the message whenif the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 4th modification *********

9.5.4.2 Protocol configuration options

This IE ismay be included in the message whenif the MS wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events)configuration parameters and/or requests (such as P-CSCF Address Request; see 3GPP TS 24.229 [95]) to the network.

********* 5th modification *********

9.5.5.2 Protocol configuration options

This IE ismay be included in the message whenif the network wishesants to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events)configuration parameters (such as P-CSCF Addresses; see 3GPP TS 24.229 [95]) to the MS.

********* 6th modification *********

9.5.6.1 Protocol configuration options

This IE ismay be included in the message whenif the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 7th modification *********

9.5.10.4 Protocol configuration options

This IE ismay be included in the message whenif the MS wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the network.

********* 8th modification *********

9.5.12.5 Protocol configuration options

This IE is~~may be~~ included in the message when~~if~~ the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 9th modification *********

9.5.13.1 Protocol configuration options

This IE is~~may be~~ included in the message when~~if~~ the network wishes to transmit (protocol) data (e.g. configuration parameters, error codes or messages/events) to the MS.

********* 10th modification *********

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 (protocol) data (e.g. configuration parameters, error codes or messages/events)~~parameters and/or requests (such as, P-CSCF Address Request; 3GPP TS 24.229 [95])~~ associated with an external protocol or an application~~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.

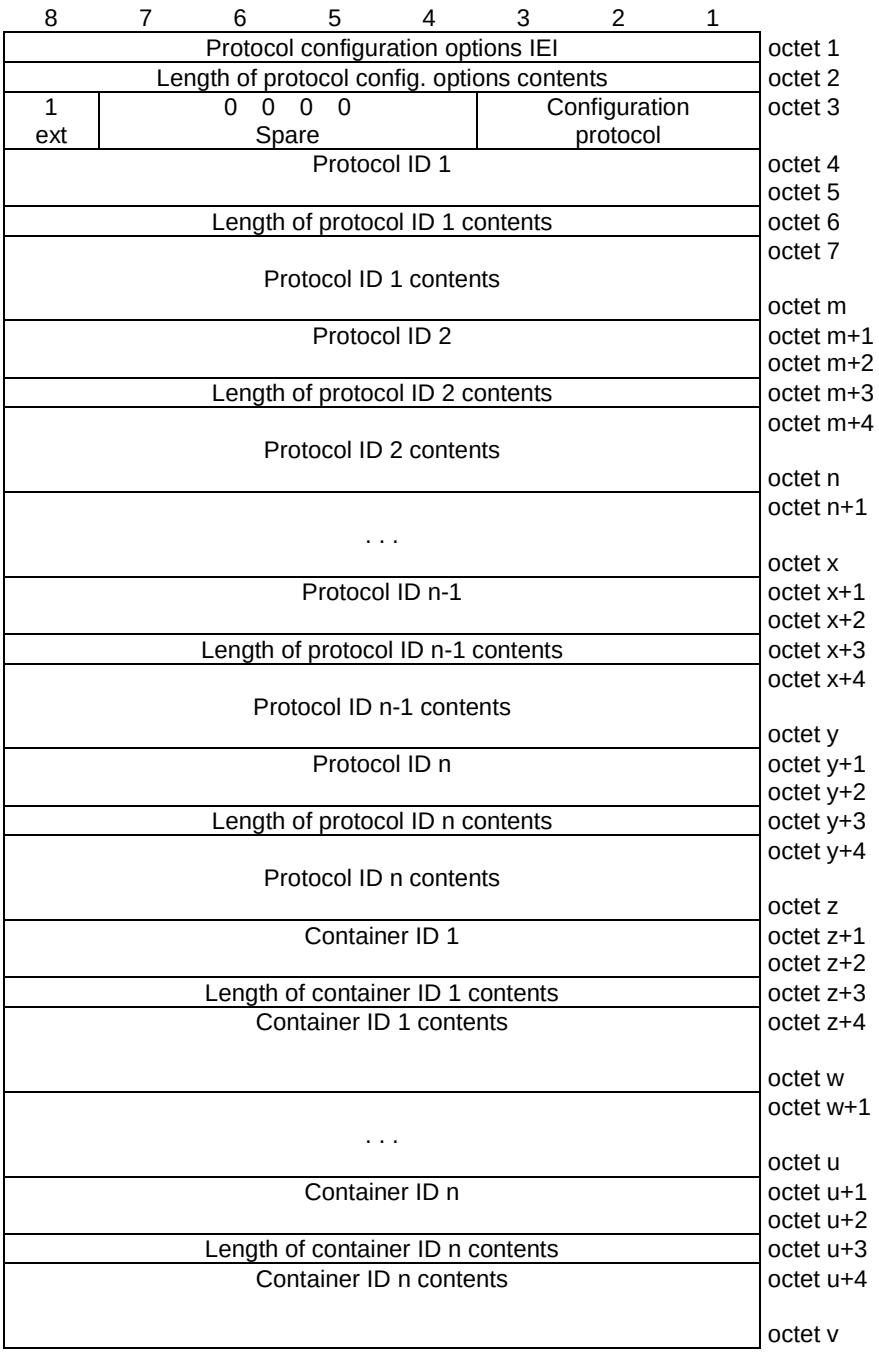

Figure 10.5.136/3GPP TS 24.008: *Protocol configuration options* information element

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

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

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

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

- the Configuration protocol options list (octets 4 to z), and

- the Additional parameters list (octets z+1 to v).

Configuration protocol options list (octets 4 to z)

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

Each unit is of variable length and consists of a:

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

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

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

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

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

PPP

At least the following protocol identifiers (as defined in RFC 1700) shall be supported in this version of the protocol:

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

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

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

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

~~Additional parameters list (octets z+1 to v)~~ **Additional parameters list (octets z+1 to v)**

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

The *additional parameters list* contains a list of special parameters, each one in a

separate container. The type of the parameter carried in a container is identified by a specific *container identifier*. In this version of the protocol, the following container identifiers are specified:

MS to network direction:

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

Network to MS direction:

- 0001H (P-CSCF 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 (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 P-CSCF Address Request, the *container identifi*er 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).

3GPP TSG-CN1 Meeting #25 ***Tdoc N1-021704***
Helsinki, Finland, 29 July – 2 August

CR-Form-v7

CHANGE REQUEST

⌘ **24.008** **CR** **675** ⌘ **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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Indication of successful establishment of Dedicated Signalling PDP context to the UE
Source:	⌘	Nokia
Work item code:	⌘	IMS-CCR
Date:	⌘	23/07/2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one 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:	⌘	SA#25 discussed the problem when the signalling flag is not transferred in PDP context Modification and Secondary PDP context activation by a Rel-4 SGSN, see incoming LS S2-022053 (LS on Modification of IMS signalling PDP context). The proposed solution is to indicate to the UE when the activation/modification of the dedicated signalling PDP context was successful. An UE not receiving this indication will consider the PDP context as a general purpose PDP context.
Summary of change:	⌘	IM CN Subsystem Signalling flag added in network to MS direction in PCO IE.
Consequences if not approved:	⌘	A PDP context may be charged as a general purpose PDP context while the user believes the PDP context is for free.

Clauses affected:	⌘	10.5.6.3 Protocol configuration options

	Y	N		
Other specs affected: ⌘		X	Other core specifications	⌘
		X	Test specifications	
		X	O&M Specifications	

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.

10.5.6.3 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.

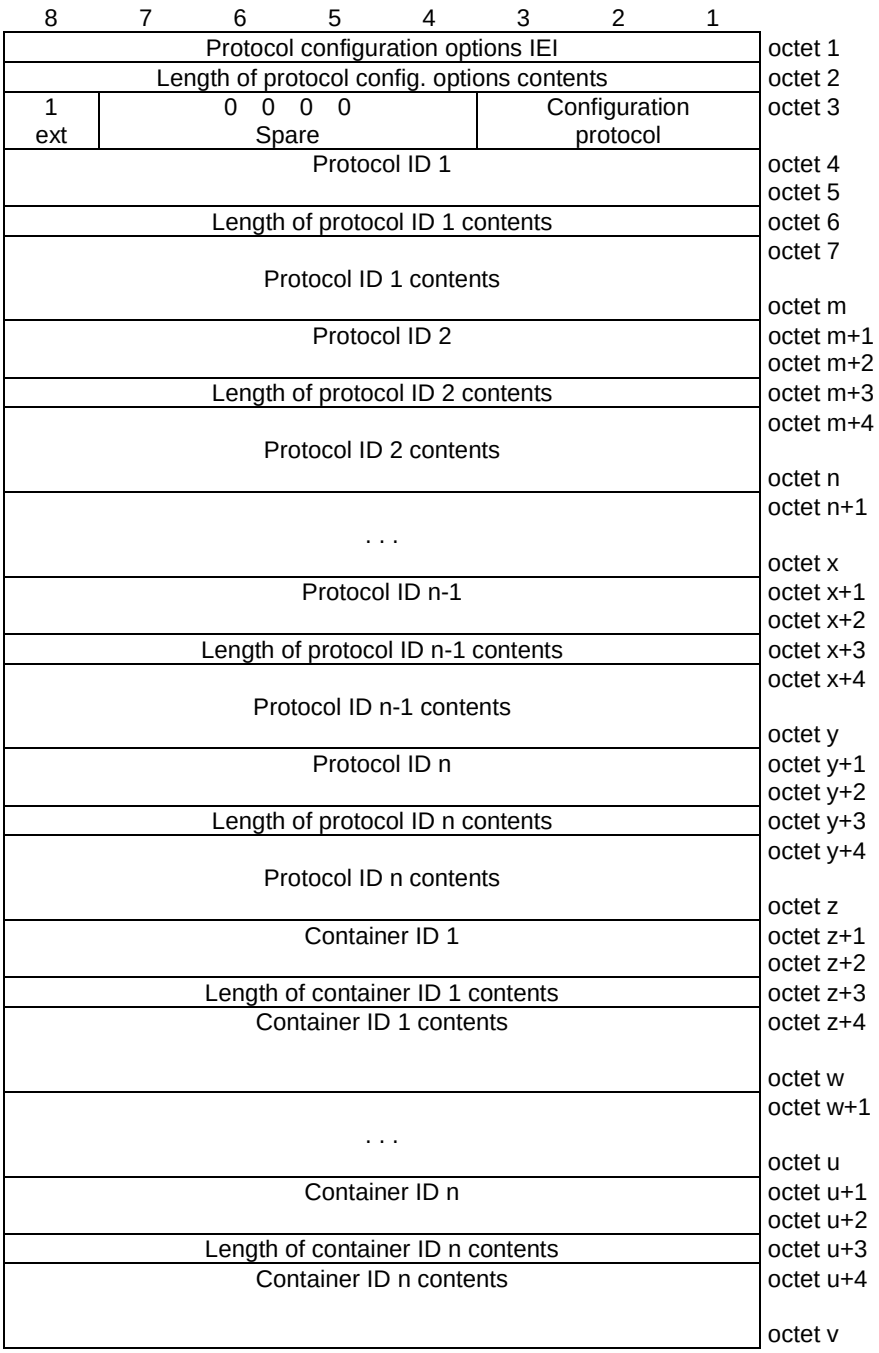

Figure 10.5.136/3GPP TS 24.008: *Protocol configuration options* information element

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

Configuration protocol (octet 3)
Bits
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All other values are interpreted as PPP in this version of the protocol.

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

- the Configuration protocol options list (octets 4 to z), and

- the Additional parameters list (octets z+1 to v).

Configuration protocol options list (octets 4 to z)

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

Each unit is of variable length and consists of a:

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

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

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

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

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

PPP

At least the following protocol identifiers (as defined in RFC 1700) shall be supported in this version of the protocol:

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

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

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

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

Additional parameters list (octets z+1 to v)

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

The *additional parameters list* contains a list of special parameters, each one in a separate container. The type of the parameter carried in a container is identified by

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

MS to network direction:

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

Network to MS direction:

- 0001H (P-CSCF Address).
- 0003H (IM CN Subsystem Signaling Flag).

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 (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 P-CSCF Address Request, the *container identifi*er 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. In Network to MS direction this information may be used by the MS to indicate to the user whether the requested dedicated signalling PDP context was successfully established.

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).

3GPP TSG-CN1 Meeting #25
Helsinki, Finland, 29 July – 2 August 2002

Tdoc N1-021840

CR-Form-v7

CHANGE REQUEST

⌘ **24.008** **CR** **679** ⌘ **rev** **1** ⌘ 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 [X] Radio Access Network [ ] Core Network [X]

Title:	⌘	Coding of Authorisation Token in Traffic Flow Template
Source:	⌘	Nortel Networks
Work item code:	⌘	IMS-CCR
Date:	⌘	19/07/2002
Category:	⌘	**F**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one 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 description of the coding of the Authorisation Token into the TFT is confusing and potentially ambiguous, especially in its reference to hexadecimal. The Authorisation Token is actually defined in 29.207 as a Session Authorisation Data Policy Element (from draft-ietf-rap-rsvp-authsession-02 - RFC number pending). This is a string of octets, so no further description is required as to how it is carried within the parameter of the TFT. The fact that it is encoded in hexadecimal in SIP is irrelevant to the encoding in the TFT. The fact that hexadecimal is used in SIP, and the manner in which the octet string is encoded/decoded to/from hexadecimal is described in the P-Media-Autorization RFC. The requirement that four filler bits are required when there are an even number of hexadecimal digits is wrong, and indeed filler bits are unnecessary because the Token is an Octet String.
Summary of change:	⌘	The reference for the definition of the Authorisation Token is amended to 29.207, which contains the definitive definition. Unnessecary text is removed.
Consequences if not approved:	⌘	Confusing specification and potential ambiguity

Clauses affected:	⌘	10.5.6.12

		Y	N		
Other specs affected:	⌘		X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	

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.

********** FIRST MODIFIED SECTION **********

Table 10.5.162/3GPP TS 24.008: *Traffic flow template* information element

TFT operation code (octet 3)
Bits
8 7 6

0 0 0 Spare
0 0 1 Create new TFT

0 1 0 Delete existing TFT
0 1 1 Add packet filters to existing TFT

1 0 0 Replace packet filters in existing TFT

1 0 1 Delete packet filters from existing TFT
1 1 0 No TFT operation

1 1 1 Reserved

E bit (bit 5 of octet 3)

The *E bit* indicates if a *parameters list* is included in the TFT IE and it is encoded as follows:
0 *parameters list* is not included
1 *parameters list* is included

Number of packet filters (octet 3)

The *number of packet filters* contains the binary coding for the number of packet filters in the *packet filter list*. The *number of packet filters* field is encoded in bits 4 through 1 of octet 3 where bit 4 is the most significant and bit 1 is the least significant bit. For the "delete existing TFT" operation and for the "no TFT operation", the *number of packet filters* shall be coded as 0. For all other operations, the number of packet filters shall be greater than 0 and less than or equal to 8.

Packet filter list (octets 4 to z)

The *packet filter list* contains a variable number of packet filters. For the "delete existing TFT" operation, the *packet filter list* shall be empty.

For the "delete packet filters from existing TFT" operation, the *packet filter list* shall contain a variable number of packet filter identifiers. This number shall be derived from the coding of the *number of packet filters* field in octet 3.

For the "create new TFT", "add packet filters to existing TFT" and "replace packet filters in existing TFT" operations, the *packet filter list* shall contain a variable number of packet filters. This number shall be derived from the coding of the *number of packet filters* field in octet 3.

Each packet filter is of variable length and consists of

- a packet filter identifier (1 octet);
- a packet filter evaluation precedence (1 octet);
- the length of the packet filter contents (1 octet); and
- the packet filter contents itself (v octets).

The *packet filter identifier* field is used to identify each packet filter in a TFT. Since the maximum number of packet filters in a TFT is 8, only the least significant 3 bits are used. Bits 8 through 4 are spare bits.

The *packet filter evaluation precedence* field is used to specify the precedence for the packet filter among all packet filters in all TFTs associated with this PDP

address. Higher the value of the *packet filter evaluation precedence* field, lower the precedence of that packet filter is. The first bit in transmission order is the most significant bit.

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

Parameters list (octets z+1 to v)

The *parameters list* contains a variable number of parameters that might need to be transferred in addition to the packet filters. If the *parameters list* is included, the *E bit* is set to 1; otherwise, the *E bit* is set to 0.

Each parameter included in the *parameters list* is of variable length and consists of:

- a parameter identifier (1 octet);
- the length of the parameter contents (1 octet); and
- the parameter contents itself (v octets).

The *parameter identifier* field is used to identify each parameter included in the *parameters list* and it contains the hexadecimal coding of the parameter identifier. Bit 8 of the *parameter identifier* field contains the most significant bit and bit 1 contains the least significant bit. In this version of the protocol, the following parameter identifiers are specified:

- 01H (Authorization Token);
- 02H (Flow Identifier).

If the *parameters list* contains a parameter identifier that is not supported by the receiving entity the corresponding parameter shall be discarded.

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

When the *parameter identifier* indicates Authorization Token, the *parameter contents* field contains an authorization token, as specified in 3GPP TS ~~24.229~~29.207. The first octet is the most significant octet of the authorization token and the last octet is the least significant octet of the authorization token.~~. This authorization token is represented as a string of digits encoded in hexadecimal form. The least significant digit is encoded in bits 4321 of the first octet, the second least significant digit is encoded in bits 8765 of the first octet, the third least significant digit is encoded in bits 4321 of the second octet, etc. When the total number of digits is even, bits 8765 of the last octet are marked as unused with the value "1111".~~

The *parameters list* shall be coded in a way that an Authorization Token (i.e. a parameter with identifier 01H) is always followed by one or more Flow Identifiers (i.e. one or more parameters with identifier 02H).

If the *parameters list* contains two or more consecutive Authorization Tokens without any Flow Identifiers in between, the receiver shall treat this as a semantical TFT error.

When the *parameter identifier* indicates Flow Identifier, the *parameter contents* field contains the binary representation of a flow identifier, as specified in 3GPP TS 24.229. Bit 1 of the first octet is least significant bit, and bit 8 of the last octet is the most significant bit.

Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element

The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first.
In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter.
Packet filter component type identifier
Bits

8 7 6 5 4 3 2 1	
0 0 0 1 0 0 0 0	IPv4 source address type
0 0 1 0 0 0 0 0	IPv6 source address type
0 0 1 1 0 0 0 0	Protocol identifier/Next header type
0 1 0 0 0 0 0 0	Single destination port type
0 1 0 0 0 0 0 1	Destination port range type
0 1 0 1 0 0 0 0	Single source port type
0 1 0 1 0 0 0 1	Source port range type
0 1 1 0 0 0 0 0	Security parameter index type
0 1 1 1 0 0 0 0	Type of service/Traffic class type
1 0 0 0 0 0 0 0	Flow label type

All other values are reserved.
For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first.
For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first.
For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header.
For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number.
For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first.
For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index.
For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first.
For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

********** END MODIFICATIONS **********