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Title:	Content of SS7 MAP Tdr Users Guide				
Doc Number:	909-1615-01	Revision:	1.0		

xDR Builders
Users Guide

Content of SS7 MAP Tdr

C. Laboue

CHANGE HISTORY

Date	Revision	Author	Revision Description	Approved (Yes/No)
07/31/09	1.0	C. Laboue	Creation	Yes

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1.0 SCOPE OF THE DOCUMENT

This document describes the contents of the different dictionaries of xDR Builders on the SS7MapTdr interface:

- Transaction,
- Frame Capture.

The fields commons to all the builders, marked in blue, are decribed in the 909-1571-01 document.

The field information: Name of the field, Data Type , size, etc are given in the document 909-1571-01

The Norm used in this documents for ENUM values are:

- MAP- 3GPP TS 29.002 V6.8.0 (2004-12)

- 3GPP TS 29.002 V5.10.0 (2004-06)
  3rd Generation Partnership Project;
  Technical Specification Group Core Network;
  Mobile Application Part (MAP) specification (Release 5)

- ETSI TS 100 974 V7.5.0 (2000-07)
  Digital cellular telecommunications system (Phase 2+)
  Mobile Application Part (MAP) specification
  (GSM 09.02 version 7.5.0 Release 1998)

- ETSI TS 100 974 V5.3.0 (1996-08)
  Digital cellular telecommunications system (Phase 2+)
  Mobile Application Part (MAP) specification
  (GSM 09.02 version 5.3.0). ETSI EN 301 344 V7.4.1 (2000-09)
  Digital cellular telecommunications system (Phase 2+)
  General Packet Radio Service (GPRS)
  Service description
  Stage 2 (3GPP TS 03.60 version 7.5.0 Release 1998)

- ETSI TS 100 901 V7.4.0 (1999-12)
  Digital cellular telecommunications system (Phase 2+)
  Technical realization of the Short Message Service (SMS)
  (GSM 03.40 version 7.4.0 Release 1998)

2.0 EVOLUTION SINCE LAST VERSION

Considered upgrade pasths to IAS 6.0 (XB 6.6.0), from:

- 6.6.0-1.2.0

	Fields	**Reference version**
Fields removed	TP-OA nature, TP-OA plan, USSD-DCS, USSD String length, USSD String length	6.6.0-1.2.0
ENUM values removed		
Field type modified		
Fields added	ITC, USSD-MMI-SC	6.6.0-1.2.0
ENUM values added		
Field length modified		
Minor changes		

Note: the modification are identified in red in the table here below.

3.0 TRANSACTION DETAILLED RECORDS (TDR)

For SS7MapTdr, Transaction Detailed Records (TDR) is the specialized name for xDR.

The SS7MapTdr xDR provision is based on reconstitution key which identifies unambiguously a Transaction. The key is based on the following fields:

Size of Key (in Bytes)	Reconstitution mode	Correlation Key (Size in bytes)
20	Transaction Id	Transaction ID (OTID/DTID) (4) + 12 unused bytes + Matching ID (4)
20	Transaction Id and Global Title	Transaction ID (OTID/DTID) (4) + GT Addresses (4 or 8 or 12 [please refer to note 1]) + Matching ID (4)
20	Transaction Id and Point Codes	Transaction ID (OTID/DTID) (4) + Point Code (OPC/DPC) (4) + 8 unused bytes + Matching ID (4)
20	Transaction Id and Routing Indicator	Transaction ID (OTID/DTID) (4) + GT Addresses (4 or 8 or 12 [please refer to note 1]) + Matching ID (4) or Transaction ID (OTID/DTID) (4) + Point Code [please refer to note 2] (OPC/DPC) (4) + 8 unused bytes + Matching ID (4) depending of the routing indicator.
20	Transaction Id and Global Title Indicator	Transaction ID (OTID/DTID) (4) + GT Addresses (4 or 8 or 12 [please refer to note 1]) + Matching ID (4) or Transaction ID (OTID/DTID) (4) + Point Code (extracted from MTP3 layer) (OPC/DPC) (4) + 8 unused bytes + Matching ID (4) depending of the global title indicator.
Note 1	One third, two thirds or the full "GT adress" could be used for constitution of the key depending of the configuration of parameter "Length of SCCP address in GT mode".	
Note 2	In case of routing on PC, PC are extracted from the SCCP layer if present, else they are extracted from the MTP3 layer.	

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3.1 « TRANSACTION DETAILLED » RECORD FORMAT

Following table shows the content of the records provided by the SS7MapTdr xDR Builder in the "Reconstitution mode".

Column Title	Long Title	Description	Size	Type
FSUnitLink	Fs unit link.	Internal use.	64 bits	FILE_PTR
See document 909-1571-01				
End time	End time, End date-time.	Date and time in seconds of the last event in the transaction	32 bits	UNIX_TIME
See document 909-1571-01				
Begin time	Begin date-time.	Date and time of the first message in the transaction, accurate to one second. In a Cell Update DR, this field represents the incoming date time in the current Cell.	32 bits	UNIX_TIME
Got from frame header given by capture system (MSW / xMF).				
MS	Begin date-time (Ms).	Milliseconds part of begin time of the first message in the transaction (TCAP-Query). It appears in the form of a decimal number of milliseconds.	16 bits	UNSIGNED
Got from frame header given by capture system (MSW / xMF).				
User1	User Defined 1.	Spare.	16 bits	INTEGER
Accept(ms)	Accept (ms), Accept time (First TCAP-continue Receipt time).	Duration between Begin time and first TCAP-continue message unit reception, from the Called Party, as the procedure is accepted. This can show whether Called Party is overloaded or not. (First TCAP-continue Receipt time).	32 bits	MS
Transaction(ms)	Transaction time (ms).	xDR Builders system duration between begin time and end time, in milliseconds. It appears in the form of a decimal number of milliseconds.	32 bits	MS
DPC	DPC, Destination Point Code.	Signaling point destination of the begin message. Appears in decimal, hexadecimal on 14 bits (or 24 bits) or in international 3-8-3 (or 8-8-8) bit notation depending on program configuration. Value from 1 to 16383 (or 16777215).	32 bits	POINT_CODE
MAX: 0 NULL: -1				
OPC	OPC, Originating Point Code.	Signaling point originating the begin message. Appears in decimal, hexadecimal on 14 bits (or 24 bits) or in international 3-8-3 (or 8-8-8) bit notation depending on program configuration. Value from 1 to 16383 (or 16777215).	32 bits	POINT_CODE
MAX: 0 NULL:-1				
Link	Link, Signalling link	User label assigned to the configuration of the link on which the message signal unit was observed.	64 bits	STRING
(8 Chars).				
Matching Id	Matching Identifier.	Value set in the configuration of the Linksets to identify a group of Linksets, this value is used for the correlation.	16 bits	INTEGER
Link type	Link type.	Type of the signaling link assigned to the configuration of the link on which the TCAP-begin message was observed. Numeric values are specific to xDR Builder.	8 bits	ENUM
0: Intermediate LSL. 1: End LSL.				

2: Unknown position.
3: Intermediate HSL Clear Channel.
4: End HSL Clear Channel.
5: Intermediate HSL ATM.
6: End HSL ATM.
7: SIGTRAN.
255: Not available:-

SIO	SIO, Service Information Octet.	Complete service information octet, includes network indicator, two spare bits and service indicator.	8 bits	HEXADECIMAL
Hexadecimal value.				

Protocol	Protocol.	Indicates the supervised protocol for which the xDR has been created.	8 bits	ENUM
See document 909-1571-01				

DR Status	Detailed Record Status.	Value set by the xDR Builder to indicate the status of the xDR	8 bits	ENUM
See document 909-1571-01				

Units size	Units Total size.	This field indicates the total number of bytes of all Signalling Units (SU) correlated together to build the xDR	16 bits	UNSIGNED
See document 909-1571-01				

Nb units	Number of signaling units.	Number of message signal units (MSU) observed in relation to the transaction.	8 bits	UNSIGNED
Decimal Value.				

Nb missing units	Number of missing signalling units (bad stored).	Number of Signaling Units (SU) relating to the xDR and which could not be stored (on PDU Storage	8 bits	UNSIGNED
See document 909-1571-01				

User3	User Defined 3.	Spare.	8 bits	UNSIGNED

Way	Way.	Direction of a call / transaction relative to the point of observation represented by the probe and according to the first message	8 bits	ENUM
See document 909-1571-01				

Successful	Successful.	Indicates whether the connection has been successful or not. Not means (TCAP abort received or TCAP return error received or TCAP reject received or timer expired).	8 bits	ENUM
0: No 1: Yes				

SLS count	SLS count, Signalling link selections count.	Number of different signaling link selections used within a transaction. Used to check whether messages of one transaction towards the same direction use the same SLS or not.	8 bits	UNSIGNED

User0	User Defined 0.	Spare.	8 bits	UNSIGNED

User error	User error.	This service enables the service-user to request the MAP dialogue to be aborted. This parameter can take values like resource limitation, resource unavailable, application procedure cancellation and procedure error.	8 bits	ENUM
01: Unknown subscriber. 02: Unknown base station. 03: Unknown MSC. 05: Unidentified subscribe. 06: Absent Subscriber SM. 07: Unknown equipment. 08: Roaming not allowed. 09: Illegal subscriber. 10: Bearer service not provisioned.				

11: Teleservice not provisioned.
12: Illegal equipment.
13: Call barred.
14: Forwarding violation.
15: Cug reject.
16: Illegal SS operation.
17: SS Error status.
18: SS Not available.
19: SS subscription violation.
20: SS incompatibility.
21: Facility not supported.
23: Invalid target base station.
24: No radio resource available.
25: No handover number available.
26: Subsequent handover failure.
27: Absent subscriber.
28: Incompatible Terminal.
29: Short Term Denial.
30: Long Term Denial.
31: Subscriber busy for MT-SMS.
32: SM delivery failure.
33: Message waiting list full.
34: System failure.
35: Data missing.
36: Unexpected data value.
37: PW registration failure.
38: Negative PW check:
39: No Roaming number Available.
40: Tracing Buffer Full.
43: Number of PW attempts Violation.
44: Number changed.
45: Busy Subscriber.
46: No Subscriber Reply.
47: Forwarding Failed.
48: Or Not Allowed.
49: ATI Not Allowed.
50: No Group Call Number Available.
51: Resource Limitation.
52: Unauthorized Requesting Network.
53: Unauthorized LCS Client.
54: Position Method Failure.
58: Unknown Or Unreachable LCS Client.
71: Unknown alphabet.
72: USSD busy.
121: Rejected By User:
122: Rejected By Network:.
123: Deflection To Served Subscriber.
124: Special Service Code.
125: Invalid Deflected To Number.
126: Max Number Of MPTY Participants Exceeded.
127: Resources Not Available.
0xFF: Not available:-

Provider cause	Provider cause value.	This parameter is used to indicate a protocol related type of error from the peer.	8 bits	ENUM

#Unknown Subscriber ERROR:
0x00: Imsi Unknown.
0x01: Gprs Subscriber Unknown.

 # Roaming Not Allowed:
0x10: Plmn Roaming Not Allowed.
0x13: Operator Determined Barring.

.
 # Call Barred ERROR:
0x20: Barring Service Active.
0x21: Operator Barring.

 # Cug-Reject ERROR:
0x30: Incoming Calls Barred Within CUG.

0x31: Subscriber Not Member Of CUG.
0x35: Requested Basic Service Violates CUG-Constraints.
0x37: CalledPartySS-Interaction Violation.

 # Absent Subscriber ERROR:
0x40: Imsi Detach.
0x41: Restricted Area.
0x42: No Page Response.

 # Sm-DeliveryFailure ERROR:
0x50: Memory Capacity Exceeded.
0x51: Equipment Protocol Error.
0x52: Equipment Not SM-Equipped.
0x53: Unknown Service Centre.
0x54: Sc-Congestion.
0x55: InvalidSME-Address.
0x56: Subscriber Not SC-Subscriber.

 # System Failure ERROR:
0x60: Plmn.
0x61: Hlr.
0x62: Vlr.
0x63: Pvlr.
0x64: Controlling Msc.
0x65: Vmsc.
0x66: Eir.
0x67: Rss.

 # Pw-RegistrationFailure ERROR:
0x70: Undetermined.
0x71: Invalid Format.
0x72: New Passwords Mismatch.

 # UnauthorizedLCSClient:
0x80: No Additional Information.
0x81: Client Not In MS Privacy Exception List.
0x82: Call To Client Not Setup.
0x83: Privacy Override Not Applicable.
0x84: Disallowed By Local Regulatory Requirements.

 # Position Method Failure:
0x90: Congestion.
0x91: Insufficient Resources.
0x92: Insufficient Measurement Data.
0x93: Inconsistent Measurement Data.
0x94: Location Procedure Not Completed.
0x95: Location Procedure Not Supported By Target MS.
0x96: QoS Not Attainable.
0x97: Position Method Not Available In Network.
0x98: Position Method Not Available In Location Area.
0xFF:Not available:-

TCAP Error	TCAP Error, TCAP Error Cause Value.	TCAP abort or reject causes.	8 bits	ENUM

0x00: Reject general problem unrecognized component.
0x01: Reject general problem mistyped component.
0x02: Reject general problem badly structured component.
0x10: Reject general problem duplicate invoke ID.
0x11: Reject invoke problem unrecognized Operation.
0x12: Reject invoke problem mistyped Parameter.
0x13: Reject invoke problem resource Limitation.
0x14: Reject invoke problem Initiating release.
0x15: Reject invoke problem Unrecognized Linked ID.
0x16: Reject invoke problem Linked response Unexpected.
0x17: Reject invoke problem Unexpected Linked Operations.
0x20: Reject invoke problem Unrecognized invoke ID.
0x21: Reject invoke problem return result Expected.
0x22: Reject return result problem Mistyped Parameter.
0x30: Reject result error problem Unrecognized invokes ID.
0x31: Reject result error problem return Error Expected.

0x32: Reject result error problem Unrecognized Error.
0x33: Reject result error problem Unexpected error.
0x34: Reject result error problem Mistyped parameter.
0x40: P-abort cause unrecognized message type.
0x41: P-abort cause unrecognized transaction ID.
0x42: P-abort cause badly formatted transaction portion.
0x43: P-abort cause incorrect transaction portion.
0x44: P-abort cause ressource limitations.
0x50: Dialogue service user null.
0x51: Dialogue service user no reason given.
0x52: Dialogue service user application context name not supported.
0x60: Dialogue service provider null.
0x61: Dialogue service provider no reason given.
0x62: Dialogue service provider no common dialogue portion.
0xFF: Not available:-

SCCP Cause	SCCP Cause, SCCP Cause Value.	Taken from the return cause field of the SCCP UDTS message. This field takes the values described in Recommendation Q.713.	8 bits	ENUM

0x00: No translation for an address of such nature.
0x01: No translation for this specific address.
0x02: Subsystem congestion.
0x03: Subsystem failure.
0x04: Unequipped user.
0x05: MTP failure.
0x06: Network congestion.
0x07: Unqualified.
0x08: Error in message transport.
0x09: Error in local processing.
0x0A: Destination cannot perform reassembly.
0x0B: SCCP failure.
0x0C: Hop counters violation.
0x0D: Segmentation not supported.
0x0E: Segmentation failure.
0xFF: Not available:-

UDT Nb	UDT Nb, UDT frames number.	Number of SCCP UDT frames observed within a transaction.	8 bits	UNSIGNED
UDTS Nb	UDTS Nb, UDTS frames number.	Number of SCCP UDTS frames observed within a transaction.	8 bits	UNSIGNED
XUDT Nb	XUDT Nb, XUDT frames number.	Number of SCCP XUDT frames observed within a transaction.	8 bits	UNSIGNED
XUDTS Nb	XUDTS Nb, XUDTS frames number.	Number of SCCP XUDTS frames observed within a transaction.	8 bits	UNSIGNED
Released by	Released by.	Indicates the party of the transaction which has released the transaction.	8 bits	ENUM

252: xDR Builders' Timer.
253: Calling party.
254: Called party.
255: Not available:-

DR Type	Detailed Record Type.	This fields indicates the type of the xDR	8 bits	ENUM

See document 909-1571-01

Cg-SSN	Cg-SSN, Calling-SSN of SCCP global title.	Sub system number from SCCP calling party number of global title, identifies an SCCP function.	8 bits	ENUM

0x00: SSN not known or not used.
0x01: SCCP management.
0x02: Reserved for ITU T.
0x03: ISDN user part.
0x04: Operat., Maint. and Admin Part: OMAP.
0x05: Mobile application part: MAP.
0x06: Home location register: HLR.
0x07: Visitor location register: VLR.

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0x08: Mobile switching center: MSC. 0x09: Equipment identifier center: EIC. 0x0A: Authentication centre: AUC. 0x0B: ISDN supplementary services. 0x0C: Reserved for international use. 0x0D: Broadband ISDN edge-to-edge applications. 0x0E: TC test responder. 0x8E: RANAP. 0x8F: RNSAP. 0x91: GMLC (MAP). 0x92: CAMEL. 0x93: GSM-SCF (MAP) or IM-SSF (MAP). 0x94: SIWF (MAP). 0x95: SGSN (MAP). 0x96: GGSN (MAP). 0xFF: Reserved for expansion of national and international SSN.				
Cg-nature	Cg-nature, Calling nature of SCCP address from global title.	Taken from the Calling nature of address indicator field of the SCCP address from global title parameter. Decoded in accordance with Q.713, numeric values are specific to xDR Builders.	8 bits	ENUM
0: Unknown. 1: International number. 2: National significant number. 3: Network specific number. 4: Subscriber number. 5: Reserved. 6: Abbreviated number. 7: Reserved for extension. 15: Reserved for national use. 255: Not available:-				
Cd-SSN	Cd-SSN, Called-SSN of SCCP global title.	Sub system number from SCCP called party number of global, identifies an SCCP function.	8 bits	ENUM
0x00: SSN not known or not used. 0x01: SCCP management. 0x02: Reserved for ITU T. 0x03: ISDN user part. 0x04: Operat., Maint. and Admin Part: OMAP. 0x05: Mobile application part: MAP. 0x06: Home location register: HLR. 0x07: Visitor location register: VLR. 0x08: Mobile switching center: MSC. 0x09: Equipment identifier center: EIC. 0x0A: Authentication centre: AUC. 0x0B: ISDN supplementary services. 0x0C: Reserved for international use. 0x0D: Broadband ISDN edge-to-edge applications. 0x0E: TC test responder. 0x8E: RANAP. 0x8F: RNSAP. 0x91: GMLC (MAP). 0x92: CAMEL. 0x93: GSM-SCF (MAP) or IM-SSF (MAP). 0x94: SIWF (MAP). 0x95: SGSN (MAP). 0x96: GGSN (MAP). 0xFF: Reserved for expansion of national and international.				
Cd-nature	Cd-nature, Called nature of SCCP address from global title.	Taken from the Called nature of address indicator field of the SCCP address from global title parameter. Decoded in accordance with Q.713, numeric values are specific to xDR Builders.	8 bits	ENUM
0: Unknown. 1: International number. 2: National significant number. 3: Network specific number. 4: Subscriber number. 5: Reserved.				

6: Abbreviated number. 7: Reserved for extension. 15: Reserved for national use. 255: Not available:-				
A-nature	A-nature, A-nature of address.	Taken from the nature of address indicator field of the MSISDN. Decoded in accordance with ETS 300 940, numeric values are specific to xDR Builders.	8 bits	ENUM
0: Unknown. 1: International number. 2: National significant number. 3: Network specific number. 4: Subscriber number. 5: Reserved. 6: Abbreviated number. 7: Reserved for extension. 255: Not available:-				
A-num plan	A-num plan, A-Number numbering plan.	Taken from the Numbering plan identification field of the MSISDN number. Decoded in accordance with ETS 300 940.	8 bits	ENUM
0x00: Unknown. 0x01: ISDN/telephony numbering plan (Recommendations E.163 and E.164). 0x02: Generic numbering plan. 0x03: Data numbering plan (Recommendation X.121). 0x04: Telex numbering plan (Recommendation F.69). 0x05: Maritime mobile numbering plan (Recommendations E.210, E.211). 0x06: Land mobile numbering plan (Recommendation E.212). 0x07: ISDN/mobile numbering plan (Recommendation E.214). 0x08: National numbering plan. 0x09: Private numbering plan. 0x0A: ERMES numbering plan (Rec. ETSI 3 01-3). 0xFF: Not available:-				
B-nature	B-nature, B-Nature of address.	Taken from the nature of address indicator in the B-MSISDN number. Decoded in accordance with ETS 300 940, the numeric values are specific to xDR Builders.	8 bits	ENUM
0: unknown. 1: international number. 2: national significant number. 3: network specific number. 4: subscriber number. 5: reserved. 6: abbreviated number. 7: reserved for extension. 255: Not available:-				
B-num plan	B-num plan, B-Number numbering plan.	Taken from the numbering plan identification field of the B-MSISDN number. Decoded in accordance with ETS 300 940.	8 bits	ENUM
0x00: Unknown. 0x01: ISDN/telephony numbering plan (Recommendations E.163 and E.164). 0x02: Generic numbering plan. 0x03: Data numbering plan (Recommendation X.121). 0x04: Telex numbering plan (Recommendation F.69). 0x05: Maritime mobile numbering plan (Recommendations E.210, E.211). 0x06: Land mobile numbering plan (Recommendation E.212). 0x07: ISDN/mobile numbering plan (Recommendation E.214). 0x08: National numbering plan. 0x09: Private numbering plan. 0x0A: ERMES numbering plan (Rec. ETSI 3 01-3). 0xFF: Not available:-				
Cg Sccp Add	Cg Sccp Add, Calling Sccp Address from Global Title.	Sccp address of the calling party from Global Title.	24 digits	BCD_ADDRESS

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Cd Sccp Add	Cd Sccp Add, Called Sccp Address from Global Title.	Sccp address of the called party from Global Title.	24 digits	BCD_ADDRESS
MSISDN	MSISDN, MS international PSTN / ISDN Number.	Number of the subscriber, can be A or B (e.g.: for 'Location Update' procedure, it can not be known). Fits to A-number or B-number of other protocols in case of multi protocol queries.	24 digits	BCD_ADDRESS
B MSISDN	B MSISDN, B MS international PSTN / ISDN Number.	Called number of the destination. (e.g.: destination number of a 'Mobile Originated Forward Short Message' procedure). Fits to B-number of other protocols in case of multi protocol queries.	24 digits	BCD_ADDRESS
C MSISDN	C MSISDN, C MS international PSTN / ISDN Number.	Contains MSRN number, from 'Provide roaming Number', 'Send Identification Info' ... Can fit to C-number of INAP, or B-number of ISUP when used in multi protocol queries.	24 digits	BCD_ADDRESS
OTID	OTID, Originating Transaction ID.	Origination Transaction ID of either frame of the transaction in the destination direction.	32 bits	HEXADECIMAL
DTID	DTID, Destination transaction ID.	Destination transaction ID of either frame of the transaction in the destination direction.	32 bits	HEXADECIMAL
C-nature	C-nature, C-Nature of address.	C-number nature of address (its type is in the C-number type field).	8 bits	ENUM
0: Unknown. 1: International number. 2: National significant number. 3: Network specific number. 4: Subscriber number. 5: Reserved. 6: Abbreviated number. 7: Reserved for extension. 255: Not available:-				
C-type	C-type, C-number type.	When MSRN is filled in C-number. Mobile Subscriber Roaming Number, number allocated by MSC/VLR, transmitted to HLR, and contains all useful information for routing of incoming calls.	8 bits	ENUM
4: Redirection number. 6: Mobile Subscriber Roaming Number. 255: Not available:-				
User2	User Defined 2.	Spare.	16 bits	INTEGER
BackCallingAddress	Back Calling Address.	Back Calling Address.	24 digits	BCD_ADDRESS
Operation code	Operation code.	Operation code of the main procedure.	8 bits	ENUM
12: Activate SS. 50: Activate trace mode. 64: Alert service center. 49: Alerting service center without result. 71: Any time interrogation. 65: Any time modification. 62: Any time subscription interrogation. 15: Authentication failure report. 54: Begin subscriber activity. 3: Cancel location. 43: Check IMEI. 13: Deactivate SS. 51: Deactivate trace mode. 8: Delete subscriber data. 77: Erase CC-entry. 11: Erase SS. 25: Failure report.				

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34: Forward access signaling.
38: Forward check SS indication.
42: Forward group call signaling.
254: Forward short message.
18: Get password.
63: Inform service center.
7: Insert subscriber data.
14: Interrogate SS.
87: Ist alert.
88: Ist command.
46: Mobile originated forward short message.
44: Mobile terminated forward short message.
35: Note internal handover.
89: Note MM event.
5: Note subscriber data modified.
26: Note subscriber present for GPRS.
48: Note subscriber present.
28: Perform handover.
30: Perform subsequent handover.
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76: Register CC-entry.
10: Register SS.
17: Register password.
75: Remote user free.
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37: Reset.
57: Restore data.
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32: SIWFS signaling modify.
72: SS invocation notification.
78: Secure transport class 1.
79: Secure transport class 2.
80: Secure transport class 3.
81: Secure transport class 4.
58: Send IMSI.
56: Send authentication info.
29: Send end signal.
40: Send group call end signal.
55: Send identification.
9: Send parameters.
24: Send routing info for GPRS.
85: Send routing info for LCS.
45: Send routing info for short message.
22: Send routing info.
73: Set reporting state.
74: Status report.
86: Subscriber location report.
52: Trace subscriber activity.
61: Unstructured SS notify.
60: Unstructured SS request.
23: Update location GPRS.
2: Update location.
255: Not available:-

SMS TP-MTI	SMS TP-MTI, SMS transfer protocol message type indicator.	Type of the short message. In case of SMS message deliver, deliver-report, submit, submit-report, command.	8 bits	ENUM
0x00: SMS Deliver report.				

0x01: SMS Deliver. 0x02: SMS Submit. 0x03: SMS Submit Report. 0x04: SMS Command. 0x05: SMS Status Report. 0x06: Reserved. 0xFF: Not available:-				
Teleserv SM	Teleserv SM, Teleservice Short Message.	A list of Short Message Extensible Teleservice parameters.	8 bits	ENUM
0x01: All Short Message Services. 0x02: Short Message MT-PP. 0x03: Short Message MT-PP, All Short Message Services. 0x04: Short Message M0-PP. 0x05: Short Message M0-PP, All Short Message Services. 0x06: Short Message M0-PP, Short Message MT-PP. 0x07: Short Message M0-PP, Short Message MT-PP, All Short Message Services. 0x00: Not available:-				
Teleserv Fac	Teleserv Fac, Teleservice Facsimile.	A list of Facsimile Extensible Teleservice parameters.	8 bits	ENUM
0x01: All Facsimile Transmission Services. 0x02: Facsimile Group3 And Alter Speech. 0x03: All Facsimile Transmission Services, Facsimile Group3 And Alter Speech. 0x04: Automatic Facsimile Group3. 0x05: All Facsimile Transmission Services, Automatic Facsimile Group3. 0x06: Facsimile Group3 And Alter Speech, Automatic Facsimile Group3. 0x07: All Facsimile Transmission Services, Facsimile Group3 And Alter Speech, Automatic Facsimile Group3. 0x08: Facsimile Group4. 0x09: Facsimile Group4, All Facsimile Transmission Services. 0x0A: Facsimile Group4, Facsimile Group3 And Alter Speech. 0x0B: Facsimile Group4, All Facsimile Transmission Services, Facsimile Group3 And Alter Speech. 0x0C: Facsimile Group4, Automatic Facsimile Group3 And Alter Speech. 0x0D: Facsimile Group4, All Facsimile Transmission Services, Automatic Facsimile Group3. 0x0E: Facsimile Group4, Facsimile Group3 And Alter Speech, Automatic Facsimile Group3. 0x0F: Facsimile Group4, All Facsimile Transmission Services, Facsimile Group3 And Alter Speech, Automatic Facsimile Group3. 0x00: Not available:-				
Length SM	Length SM, Length of short message.	Length of the data in a SMS transaction .	32 bits	ENUM
MIN:-1 MAX:160 0xFFFFFFFF:Not available:-				
IMSI	IMSI, International Mobile Subscriber Identity number.	International SIM card number of a subscriber.	16 digits	BCD_ADDRESS
MSC nb	MSC nb, Mobile Switching Center number.	Current switch center, which interworking with current VLR hereafter, in order to manage Calls, Handover... Radio Resources.	24 digits	BCD_ADDRESS
VLR nb	VLR nb, Visitor Location Register number.	This is the current register of a subscriber. It belongs to either network in which the subscriber is roaming. It manages locally Calls; Roaming...It has currently a representation of data concerning the subscriber, by continually getting them from subscriber's unique HLR.	24 digits	BCD_ADDRESS
HLR nb	HLR nb, Home Location Register number.	Nominal register of a subscriber, which contains his subscription profile information. This HLR belongs to subscriber's operator. It remains the same, during roaming subscriber. The HLR tries to keep knowledge of location of the roamer, and is also aware of addition/cancellation/barring of services of the subscriber.	24 digits	BCD_ADDRESS
LMSI	LMSI, Local Mobile Subscriber Identifier.	Local Identifier of a Subscriber allocated by his current MSC/VLR, and transmitted to his HLR, for signalisation acceleration reasons.	32 bits	DUMP

TMSI	TMSI, Temporary Mobile Subscriber Identifier.	Temporarily allocated and regularly reallocated identifier, in order to avoid transmission of IMSI (replacing it) in the network net work as often as possible, for anti-intrusion security reasons.	32 bits	DUMP
MCC	MCC, Mobile Country Code.	Current country of mobile subscriber.	4 digits	BCD_ADDRESS
MNC	MNC, Mobile Network Code.	Current network of mobile subscriber, for given country code.	4 digits	BCD_ADDRESS
LAC	LAC, Location Area Code.	Current location area of mobile subscriber, for a given (MCC, MNC) location code. Fits to group of one or more cells.	16 bits	DUMP
Cell ident	Cell ident, Cell identity.	Current cell of mobile subscriber, for a given (MCC, MNC). Mainly fits to base station antenna (BTS).	16 bits	DUMP
Serv cent add	Serv Cent Add, Service Center Address.	In case of short message forwarding. Fits to origin service center in case of short message delivery (mobile terminated short message) / destination service center in case of short message submit (mobile originated short message).	24 digits	BCD_ADDRESS
IMEI	IMEI, International Mobile Equipment Identity.	International identity of a mobile equipment.	16 digits	BCD_ADDRESS
CAMEL phases	CAMEL phases.	CAMEL phases supported by the visited VLR.	8 bits	ENUM
0x01: Phase 1. 0x02: Phase 2. 0x03: Phase 1, Phase 2. 0x04: Phase 3. 0x05: Phase 1, Phase 3. 0x06: Phase 2, Phase 3. 0x07: Phase 1, Phase 2, Phase 3. 0x08: Phase 4. 0x09: Phase 1, Phase 4. 0x0A: Phase 2, Phase 4. 0x0B: Phase 1, Phase 2, Phase 4. 0x0C: Phase 3, Phase 4. 0x0D: Phase 1, Phase 3, Phase 4. 0x0E: Phase 2, Phase 3, Phase 4. 0x0F: Phase 1, Phase 2, Phase 3, Phase 4. 0x00: Not available:-				
CAMEL cpct hand	CAMEL cpct hand, CAMEL capacity handling.	CAMEL capacity handling represents the CAMEL phase asked by the SCP of the subscriber, for the service keys.	8 bits	ENUM
0x01: Phase 1. 0x02: Phase 2. 0x03: Phase 3. 0x04: Phase 4. 0xFF: Not available:-				
Nb SK	Nb SK, Number of Service Key.	Number of service key observed within a transaction.	8 bits	ENUM
0x00: Not available:-				
BOIC	BOIC, Barring of outgoing international calls.	Indicating the presence or not of the 'international outgoing calls barred' categories of barring.	8 bits	ENUM
0x93: Present. 0xFF: Not available:-				
Service key 1st	Service key 1st, Service Key interrogated (First).	Information that allows the SCF to choose the appropriate service logic.	32 bits	UNSIGNED
MIN: -1 MAX: 0 0xFFFFFFFF: Not available:- From 6.4.1 package				

Service key 2nd	Service key 2nd, Service Key interrogated (Second).	Information that allows the SCF to choose the appropriate service logic.	32 bits	UNSIGNED
MIN: -1 MAX: 0 0xFFFFFFFF: Not available:- From 6.4.1 package				
Service key 3rd	Service key 3rd, Service Key interrogated (Third).	Information that allows the SCF to choose the appropriate service logic.	32 bits	UNSIGNED
MIN: -1 MAX: 0 0xFFFFFFFF: Not available:- From 6.4.1 package				
Service key 4th	Service key 4th, Service Key interrogated (Fourth).	Information that allows the SCF to choose the appropriate service logic.	32 bits	UNSIGNED
MIN: -1 MAX: 0 0xFFFFFFFF: Not available:- From 6.4.1 package				
GSM SCF Add 1st	GSM SCF Add 1st, GSM service control function Address (First).	A functional entity that contains the CAMEL service logique to implement OSS. It interfaces with the GSM SSF and the HLR.	24 digits	BCD_ADDRESS
GSM SCF Add 2nd	GSM SCF Add 2nd, GSM service control function Address (Second).	A functional entity that contains the CAMEL service logique to implement OSS. It interfaces with the GSM SSF and the HLR.	24 digits	BCD_ADDRESS
SGSN IP Address	SGSN IP Address.	The Serving GPRS Support Node (SGSN), which is at the same hierarchical level as the MSC, keeps track of the individual MSs' location and performs security functions and access control.	32 bits	IP_V4
If no IP Address : 0.0.0.0				
SGSN Number	SGSN Number.	The Serving GPRS Support Node (SGSN), which is at the same hierarchical level as the MSC, keeps track of the individual MSs' location and performs security functions and access control.	24 digits	BCD_ADDRESS
GGSN IP Address	GGSN IP Address.	The Gateway GPRS Support Node (GGSN), the GGSN provides interworking with external packet-switched networks, network screens and routing of the Network-Requested PDP Context activation.	32 bits	IP_V4
If no IP Address : 0.0.0.0				
GGSN Number	GGSN Number.	The Gateway GPRS Support Node (GGSN), the GGSN provides interworking with external packet-switched networks, network screens and routing of the Network-Requested PDP Context activation.	24 digits	BCD_ADDRESS
PDP-Add	PDP-Add, Packet Data Protocol – Address.	This parameter indicates the address of the data protocol as defined in GSM 03.60. PDP address, e.g., an X.121 address. This field shall be empty if dynamic addressing is allowed.	32 digits	BCD_ADDRESS
PDP-Type Nb 1	PDP-Type Nb 1, First Packet Data Protocol - Type Number.	This parameter indicates which type of protocol is used by the MS as defined in GSM 03.60. PDP type, e.g., X.25, PPP, or IP.	8 bits	ENUM
0x00: X25/X121. 0x01: PDP-Type PPP. 0x21: IPv4 address. 0x57: IPv6 address. 0xEF: Undefined Type Number. 0xFF: Not available:-				
PDP-Type Nb 2	PDP-Type Nb 2, Second Packet Data	This parameter indicates which type of protocol is used	8 bits	ENUM

	Protocol - Type Number.	by the MS as defined in GSM 03.60. PDP type, e.g., X.25, PPP, or IP.		
0x00: X25/X121. 0x01: PDP-Type PPP. 0x21: IPv4 address. 0x57: IPv6 address. 0xEF: Undefined Type Number. 0xFF: Not available:-				
PDP-Type Nb 3	PDP-Type Nb 3, Third Packet Data Protocol - Type Number.	This parameter indicates which type of protocol is used by the MS as defined in GSM 03.60. PDP type, e.g., X.25, PPP, or IP.	8 bits	ENUM
0x00: X25/X121. 0x01: PDP-Type PPP. 0x21: IPv4 address. 0x57: IPv6 address. 0xEF: Undefined Type Number. 0xFF: Not available:-				
PDP-Type Nb 4	PDP-Type Nb 4, Fourth Packet Data Protocol - Type Number.	This parameter indicates which type of protocol is used by the MS as defined in GSM 03.60. PDP type, e.g., X.25, PPP, or IP.	8 bits	ENUM
0x00: X25/X121. 0x01: PDP-Type PPP. 0x21: IPv4 address. 0x57: IPv6 address. 0xEF: Undefined Type Number. 0xFF: Not available:-				
PDP-Type Nb 5	PDP-Type Nb 5, Fifth Packet Data Protocol - Type Number.	This parameter indicates which type of protocol is used by the MS as defined in GSM 03.60. PDP type, e.g., X.25, PPP, or IP.	8 bits	ENUM
0x00: X25/X121. 0x01: PDP-Type PPP. 0x21: IPv4 address. 0x57: IPv6 address. 0xEF: Undefined Type Number. 0xFF: Not available:-				
PDP-Type Org 1	PDP-Type Org 1, Packet Data Protocol - Type Organisation 1.	The PDP Type Organization is organization that is responsible for the PDP Type Number field and the PDP Address format.	8 bits	ENUM
#0000: ETSI allocated address (e.g. X.121). #0001: IETF allocated address. #1111: Empty PDP type. 0xFF: Not available:-				
PDP-Type Org 2	PDP-Type Org 2, Packet Data Protocol - Type Organisation 2.	The PDP Type Organization is organization that is responsible for the PDP Type Number field and the PDP Address format.	8 bits	ENUM
#0000: ETSI allocated address (e.g. X.121). #0001: IETF allocated address. #1111: Empty PDP type. 0xFF:Not available:-				
PDP-Type Org 3	PDP-Type Org 3, Packet Data Protocol - Type Organisation 3.	The PDP Type Organization is organization that is responsible for the PDP Type Number field and the PDP Address format.	8 bits	ENUM
#0000: ETSI allocated address (e.g. X.121). #0001: IETF allocated address. #1111: Empty PDP type. 0xFF:Not available:-				
PDP-Type Org 4	PDP-Type Org 4, Packet Data Protocol - Type Organisation 4.	The PDP Type Organization is organization that is responsible for the PDP Type Number field and the PDP Address format.	8 bits	ENUM
#0000: ETSI allocated address (e.g. X.121).				

#0001: IETF allocated address. #1111: Empty PDP type. 0xFF: Not available:-				
PDP-Type Org 5	PDP-Type Org 5, Packet Data Protocol - Type Organisation 5.	The PDP Type Organization is organization that is responsible for the PDP Type Number field and the PDP Address format.	8 bits	ENUM
#0000: ETSI allocated address (e.g. X.121). #0001: IETF allocated address. #1111: Empty PDP type. 0xFF: Not available:-				
Reliability Class 1	Reliability Class 1.	It indicates the transmission characteristics that are required by a GPRS application.	8 bits	ENUM
#000: Subscribe reliability class (reserved if Netw to MS). #001: Acknowledged GTP, LLC, and RLC; Protected data. #010: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data. #011: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data. #100: Unacknowledged GTP, LLC, and RLC, Protected data. #101: Unacknowledged GTP, LLC, and RLC, Unprotected data. #110: Unacknowledged GTP and LLC; Acknowledged RLC, Unprotected data. #111: Reserved. 0xFF: Not available:-				
Reliability Class 2	Reliability Class 2.	It indicates the transmission characteristics that are required by a GPRS application.	8 bits	ENUM
#000: Subscribe reliability class (reserved if Netw to MS). #001: Acknowledged GTP, LLC, and RLC; Protected data. #010: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data. #011: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data. #100: Unacknowledged GTP, LLC, and RLC, Protected data. #101: Unacknowledged GTP, LLC, and RLC, Unprotected data. #110: Unacknowledged GTP and LLC; Acknowledged RLC, Unprotected data. #111: Reserved. 0xFF: Not available:-				
Reliability Class 3	Reliability Class 3	It indicates the transmission characteristics that are required by a GPRS application.	8 bits	ENUM
#000: Subscribe reliability class (reserved if Netw to MS). #001: Acknowledged GTP, LLC, and RLC; Protected data. #010: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data. #011: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data. #100: Unacknowledged GTP, LLC, and RLC, Protected data. #101: Unacknowledged GTP, LLC, and RLC, Unprotected data. #110: Unacknowledged GTP and LLC; Acknowledged RLC, Unprotected data. #111: Reserved. 0xFF: Not available:-				
Reliability Class 4	Reliability Class 4.	It indicates the transmission characteristics that are required by a GPRS application.	8 bits	ENUM
#000: Subscribe reliability class (reserved if Netw to MS). #001: Acknowledged GTP, LLC, and RLC; Protected data. #010: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data. #011: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data. #100: Unacknowledged GTP, LLC, and RLC, Protected data. #101: Unacknowledged GTP, LLC, and RLC, Unprotected data. #110: Unacknowledged GTP and LLC; Acknowledged RLC, Unprotected data. #111: Reserved 0xFF: Not available:-				
Reliability Class 5	Reliability Class 5.	It indicates the transmission characteristics that are required by a GPRS application.	8 bits	ENUM
#000: Subscribe reliability class (reserved if Netw to MS). #001: Acknowledged GTP, LLC, and RLC; Protected data. #010: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data. #011: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data.				

#100: Unacknowledged GTP, LLC, and RLC, Protected data. #101: Unacknowledged GTP, LLC, and RLC, Unprotected data. #110: Unacknowledged GTP and LLC; Acknowledged RLC, Unprotected data. #111: Reserved. 0xFF: Not available:-				
Delay Class 1	Delay Class 1.	The delay parameter defines the end-to-end transfer delay incurred in the transmission of PDUs through the GPRS network(s).	8 bits	ENUM
#000: Subscribed delay class (reserved if Netw to MS). #001: Delay class 1. #010: Delay class 2. #011: Delay class 3. #100: Delay class 4 (best effort, 4). #101: Delay class 4 (best effort, 5). #110: Delay class 4 (best effort, 6). #111: Reserved. 0xFF: Not available:-				
Delay Class 2	Delay Class 2.	The delay parameter defines the end-to-end transfer delay incurred in the transmission of PDUs through the GPRS network(s).	8 bits	ENUM
#000: Subscribed delay class (reserved if Netw to MS). #001: Delay class 1. #010: Delay class 2. #011: Delay class 3. #100: Delay class 4 (best effort, 4). #101: Delay class 4 (best effort, 5). #110: Delay class 4 (best effort, 6). #111: Reserved. 0xFF: Not available:-				
Delay Class 3	Delay Class 3.	The delay parameter defines the end-to-end transfer delay incurred in the transmission of PDUs through the GPRS network(s).	8 bits	ENUM
#000: Subscribed delay class (reserved if Netw to MS). #001: Delay class 1. #010: Delay class 2. #011: Delay class 3. #100: Delay class 4 (best effort, 4). #101: Delay class 4 (best effort, 5). #110: Delay class 4 (best effort, 6). #111: Reserved. 0xFF: Not available:-				
Delay Class 4	Delay Class 4.	The delay parameter defines the end-to-end transfer delay incurred in the transmission of PDUs through the GPRS network(s).	8 bits	ENUM
#000: Subscribed delay class (reserved if Netw to MS). #001: Delay class 1. #010: Delay class 2. #011: Delay class 3. #100: Delay class 4 (best effort, 4). #101: Delay class 4 (best effort, 5). #110: Delay class 4 (best effort, 6). #111: Reserved. 0xFF: Not available:-				
Delay Class 5	Delay Class 5.	The delay parameter defines the end-to-end transfer delay incurred in the transmission of PDUs through the GPRS network(s).	8 bits	ENUM
#000: Subscribed delay class (reserved if Netw to MS). #001: Delay class 1. #010: Delay class 2. #011: Delay class 3. #100: Delay class 4 (best effort, 4). #101: Delay class 4 (best effort, 5). #110: Delay class 4 (best effort, 6).				

#111: Reserved. 0xFF: Not available:-				
Precedence Class 1	Precedence Class 1.	Also called as Service Precedence, and it is a synonym for the priority. Under normal operating conditions, the GPRS network shall attempt to meet the service commitments of all QoS profiles.	8 bits	ENUM
#000: Subscribed precedence (reserved if Netw to MS). #001: High priority. #010: Normal priority. #011: Low priority. #100: Normal priority (4). #101: Normal priority (5). #110: Normal priority (6). #111: Reserved. 0xFF: Not available:-				
Precedence Class 2	Precedence Class 2.	Also called as Service Precedence, and it is a synonym for the priority. Under normal operating conditions, the GPRS network shall attempt to meet the service commitments of all QoS profiles.	8 bits	ENUM
#000: Subscribed precedence (reserved if Netw to MS). #001: High priority. #010: Normal priority. #011: Low priority. #100: Normal priority (4). #101: Normal priority (5). #110: Normal priority (6). #111: Reserved. 0xFF: Not available:-				
Precedence Class 3	Precedence Class 3.	Also called as Service Precedence, and it is a synonym for the priority. Under normal operating conditions, the GPRS network shall attempt to meet the service commitments of all QoS profiles.	8 bits	ENUM
#000: Subscribed precedence (reserved if Netw to MS). #001: High priority. #010: Normal priority. #011: Low priority. #100: Normal priority (4). #101: Normal priority (5). #110: Normal priority (6). #111: Reserved. 0xFF: Not available:-				
Precedence Class 4	Precedence Class 4.	Also called as Service Precedence, and it is a synonym for the priority. Under normal operating conditions, the GPRS network shall attempt to meet the service commitments of all QoS profiles.	8 bits	ENUM
#000: Subscribed precedence (reserved if Netw to MS). #001: High priority. #010: Normal priority. #011: Low priority. #100: Normal priority (4). #101: Normal priority (5). #110: Normal priority (6). #111: Reserved. 0xFF: Not available:-				
Precedence Class 5	Precedence Class 5.	Also called as Service Precedence, and it is a synonym for the priority. Under normal operating conditions, the GPRS network shall attempt to meet the service commitments of all QoS profiles.	8 bits	ENUM
#000: Subscribed precedence (reserved if Netw to MS). #001: High priority. #010: Normal priority. #011: Low priority. #100: Normal priority (4).				

#101: Normal priority (5). #110: Normal priority (6). #111: Reserved. 0xFF: Not available:-				
Peak Throughput 1	Peak Throughput 1.	It is specified in terms of a set of throughput classes that characterise the expected bandwidth required for a PDP context. The throughput is defined by both peak and mean classes.	8 bits	ENUM
#0000: Subscribed peak throughput (reserved if Netw to MS). #0001: Up to 1 000 octet/s. #0010: Up to 2 000 octet/s. #0011: Up to 4 000 octet/s. #0100: Up to 8 000 octet/s. #0101: Up to 16 000 octet/s. #0110: Up to 32 000 octet/s. #0111: Up to 64 000 octet/s. #1000: Up to 128 000 octet/s. #1001: Up to 256 000 octet/s. #1010: Up to 1 000 octet/s (10). #1011: Up to 1 000 octet/s (11). #1100: Up to 1 000 octet/s (12). #1101: Up to 1 000 octet/s (13). #1110: Up to 1 000 octet/s (14). #1111: Reserved. 0xFF: Not available:-				
Peak Throughput 2	Peak Throughput 2.	It is specified in terms of a set of throughput classes that characterise the expected bandwidth required for a PDP context. The throughput is defined by both peak and mean classes.	8 bits	ENUM
#0000: Subscribed peak throughput (reserved if Netw to MS). #0001: Up to 1 000 octet/s. #0010: Up to 2 000 octet/s. #0011: Up to 4 000 octet/s. #0100: Up to 8 000 octet/s. #0101: Up to 16 000 octet/s. #0110: Up to 32 000 octet/s. #0111: Up to 64 000 octet/s. #1000: Up to 128 000 octet/s. #1001: Up to 256 000 octet/s. #1010: Up to 1 000 octet/s (10). #1011: Up to 1 000 octet/s (11). #1100: Up to 1 000 octet/s (12). #1101: Up to 1 000 octet/s (13). #1110: Up to 1 000 octet/s (14). #1111: Reserved. 0xFF: Not available:-				
Peak Throughput 3	Peak Throughput 3.	It is specified in terms of a set of throughput classes that characterise the expected bandwidth required for a PDP context. The throughput is defined by both peak and mean classes.	8 bits	ENUM
#0000: Subscribed peak throughput (reserved if Netw to MS). #0001: Up to 1 000 octet/s. #0010: Up to 2 000 octet/s. #0011: Up to 4 000 octet/s. #0100: Up to 8 000 octet/s. #0101: Up to 16 000 octet/s. #0110: Up to 32 000 octet/s. #0111: Up to 64 000 octet/s. #1000: Up to 128 000 octet/s. #1001: Up to 256 000 octet/s. #1010: Up to 1 000 octet/s (10). #1011: Up to 1 000 octet/s (11). #1100: Up to 1 000 octet/s (12). #1101: Up to 1 000 octet/s (13). #1110: Up to 1 000 octet/s (14). #1111: Reserved.				

0xFF: Not available:-				
Peak Throughput 4	Peak Throughput 4.	It is specified in terms of a set of throughput classes that characterise the expected bandwidth required for a PDP context. The throughput is defined by both peak and mean classes.	8 bits	ENUM
#0000: Subscribed peak throughput (reserved if Netw to MS). #0001: Up to 1 000 octet/s. #0010: Up to 2 000 octet/s. #0011: Up to 4 000 octet/s. #0100: Up to 8 000 octet/s. #0101: Up to 16 000 octet/s. #0110: Up to 32 000 octet/s. #0111: Up to 64 000 octet/s. #1000: Up to 128 000 octet/s. #1001: Up to 256 000 octet/s. #1010: Up to 1 000 octet/s (10). #1011: Up to 1 000 octet/s (11). #1100: Up to 1 000 octet/s (12). #1101: Up to 1 000 octet/s (13). #1110: Up to 1 000 octet/s (14). #1111: Reserved. 0xFF: Not available:-				
Peak Throughput 5	Peak Throughput 5.	It is specified in terms of a set of throughput classes that characterise the expected bandwidth required for a PDP context. The throughput is defined by both peak and mean classes.	8 bits	ENUM
#0000: Subscribed peak throughput (reserved if Netw to MS). #0001: Up to 1 000 octet/s. #0010: Up to 2 000 octet/s. #0011: Up to 4 000 octet/s. #0100: Up to 8 000 octet/s. #0101: Up to 16 000 octet/s. #0110: Up to 32 000 octet/s. #0111: Up to 64 000 octet/s. #1000: Up to 128 000 octet/s. #1001: Up to 256 000 octet/s. #1010: Up to 1 000 octet/s (10). #1011: Up to 1 000 octet/s (11). #1100: Up to 1 000 octet/s (12). #1101: Up to 1 000 octet/s (13). #1110: Up to 1 000 octet/s (14). #1111: Reserved. 0xFF: Not available:-				
Mean Throughput 1	Mean Throughput 1.	It specifies the average rate at which data is expected to be transferred across the GPRS network during the remaining lifetime of an activated PDP context.	8 bits	ENUM
#00000: Subscribed mean throughput (reserved if Netw to MS). #00001: 100 octet/h. #00010: 200 octet/h. #00011: 500 octet/h. #00100: 1 000 octet/h. #00101: 2 000 octet/h. #00110: 5 000 octet/h. #00111: 10 000 octet/h. #01000: 20 000 octet/h. #01001: 50 000 octet/h. #01010: 100 000 octet/h. #01011: 200 000 octet/h. #01100: 500 000 octet/h. #01101: 1 000 000 octet/h. #01110: 2 000 000 octet/h. #01111: 5 000 000 octet/h. #10000: 10 000 000 octet/h. #10001: 20 000 000 octet/h. #10010: 50 000 000 octet/h. #11110: Reserved. #11111: Best effort.				

0xFF: Not available:-				
Mean Throughput 2	Mean Throughput 2.	It specifies the average rate at which data is expected to be transferred across the GPRS network during the remaining lifetime of an activated PDP context.	8 bits	ENUM
#00000: Subscribed mean throughput (reserved if Netw to MS). #00001: 100 octet/h. #00010: 200 octet/h. #00011: 500 octet/h. #00100: 1 000 octet/h. #00101: 2 000 octet/h. #00110: 5 000 octet/h. #00111: 10 000 octet/h. #01000: 20 000 octet/h. #01001: 50 000 octet/h. #01010: 100 000 octet/h. #01011: 200 000 octet/h. #01100: 500 000 octet/h. #01101: 1 000 000 octet/h. #01110: 2 000 000 octet/h. #01111: 5 000 000 octet/h. #10000: 10 000 000 octet/h. #10001: 20 000 000 octet/h. #10010: 50 000 000 octet/h. #11110: Reserved. #11111: Best effort. 0xFF: Not available:-				
Mean Throughput 3	Mean Throughput 3.	It specifies the average rate at which data is expected to be transferred across the GPRS network during the remaining lifetime of an activated PDP context.	8 bits	ENUM
#00000:Subscribed mean throughput (reserved if Netw to MS) #00001:100 octet/h #00010:200 octet/h #00011:500 octet/h #00100:1 000 octet/h #00101:2 000 octet/h #00110:5 000 octet/h #00111:10 000 octet/h #01000:20 000 octet/h #01001:50 000 octet/h #01010:100 000 octet/h #01011:200 000 octet/h #01100:500 000 octet/h #01101:1 000 000 octet/h #01110:2 000 000 octet/h #01111:5 000 000 octet/h #10000:10 000 000 octet/h #10001:20 000 000 octet/h #10010:50 000 000 octet/h #11110:Reserved #11111:Best effort 0xFF:Not available:-				
Mean Throughput 4	Mean Throughput 4.	It specifies the average rate at which data is expected to be transferred across the GPRS network during the remaining lifetime of an activated PDP context.	8 bits	ENUM
#00000:Subscribed mean throughput (reserved if Netw to MS) #00001:100 octet/h #00010:200 octet/h #00011:500 octet/h #00100:1 000 octet/h #00101:2 000 octet/h #00110:5 000 octet/h #00111:10 000 octet/h #01000:20 000 octet/h #01001:50 000 octet/h #01010:100 000 octet/h #01011:200 000 octet/h #01100:500 000 octet/h				

#01101:1 000 000 octet/h #01110:2 000 000 octet/h #01111:5 000 000 octet/h #10000:10 000 000 octet/h #10001:20 000 000 octet/h #10010:50 000 000 octet/h #11110:Reserved #11111:Best effort 0xFF:Not available:-				
Mean Throughput 5	Mean Throughput 5.	It specifies the average rate at which data is expected to be transferred across the GPRS network during the remaining lifetime of an activated PDP context.	8 bits	ENUM
#00000:Subscribed mean throughput (reserved if Netw to MS) #00001:100 octet/h #00010:200 octet/h #00011:500 octet/h #00100:1 000 octet/h #00101:2 000 octet/h #00110:5 000 octet/h #00111:10 000 octet/h #01000:20 000 octet/h #01001:50 000 octet/h #01010:100 000 octet/h #01011:200 000 octet/h #01100:500 000 octet/h #01101:1 000 000 octet/h #01110:2 000 000 octet/h #01111:5 000 000 octet/h #10000:10 000 000 octet/h #10001:20 000 000 octet/h #10010:50 000 000 octet/h #11110:Reserved #11111:Best effort 0xFF:Not available:-				
Equip Status	Equipment Status.	This parameter is sent by the responder in case of successful outcome of the service	8 bits	ENUM
0:White Listed:White 1:Black Listed:Black 2:Grey Listed:Grey 255:Not available:-				
APN 1	APN 1, First access point name.	Used by the GGSN to differentiate between accesses to different external packet data networks using the same PDP context.	64 bits	VARSTRING
APN 2	APN 2, Second access point name.	Used by the GGSN to differentiate between accesses to different external packet data networks using the same PDP context.	64 bits	VARSTRING
APN 3	APN 3, Third access point name.	Used by the GGSN to differentiate between accesses to different external packet data networks using the same PDP context.	64 bits	VARSTRING
APN 4	APN 4, Fourth access point name.	Used by the GGSN to differentiate between accesses to different external packet data networks using the same PDP context.	64 bits	VARSTRING
APN 5	APN 5, Fifth access point name.	Used by the GGSN to differentiate between accesses to different external packet data networks using the same PDP context.	64 bits	VARSTRING
Transaction identifier	Transaction identifier.	Value that identifies uniquely all frames belonging to a same call / connection / transaction / procedure. It can also be used to associate the SUDR to the relevant xDR. This value should be unique on a machine and is either a combination of correlation keys or a value fixed by the builder.	64 bits	DUMP

ITC	ITC, Information Transfer Capability	ITC, Information Transfer Capability. Taken from the Bearer Capability field	8 bits	ENUM
0: Speech 1: Unrestricted Digital Information 2: 3.1 khz audio, ex PLMN 3: Facsimile group 3 5: Restricted Digital Information (Other ITC) 7: reserved, meaning alternate speech/facsimile group 3 - starting with speech 255: Not available:-				
HO-nature	HO-nature, HO-Nature of address	Taken from the nature of address indicator in the HandOver number. Decoded in accordance with ETS 300 940, the numeric values are specific to xDR Builders	8 bits	ENUM
0: unknown 1: international number 2: national significant number. 3: network specific number. 4: subscriber number. 5: reserved 6: abbreviated number. 7: reserved for extension. 255: Not available:-				
HO-num plan	HO-num plan, HO-Number numbering plan	Taken from the numbering plan identification field of the HandOver number. Decoded in accordance with ETS 300 940	8 bits	ENUM
0x00: unknown 0x01: ISDN/telephony numbering plan (Recommendations E.163 and E.164): ISDN 0x02: generic numbering plan 0x03: data numbering plan (Recommendation X.121) 0x04: telex numbering plan (Recommendation F.69) 0x05: maritime mobile numbering plan (Recommendations E.210, E.211) 0x06: land mobile numbering plan (Recommendation E.212) 0x07: ISDN/mobile numbering plan (Recommendation E.214) 0x08: national numbering plan 0x09: private numbering plan 0x0A: ERMES numbering plan (Rec. ETSI 3 01-3) 0xFF: Not available:-				
TP-OA	TP Originating address	It contains the TP originating address	64 bits	VARSTRING
HO-number	HO-number	Taken from the HandOver number address indicator	24 digits	BCD_ADDRESS
USSD-MMI-SC	USSD-MMI-SC	It contains the decoded USSD MMI service code (only service code beginning with # or *)	64 bits	STRING

4.0 FRAME CAPTURE RECORDS

4.1 « FRAME CAPTURE » RECORD FORMAT

Following table shows the content of the records provided by the SS7MapTdr xDR Builder in th "Frame capture mode".

Column Title	Long Title	Description	Size	Type
FSUnitLink	Fs unit link.	Internal use.	64 bits	FILE_PTR
See document 909-1571-01				
End time	End date-time.	Date and time in seconds of the last event in the transaction	32 bits	UNIX_TIME
See document 909-1571-01				
Ms	Begin date-time (Ms).	Milliseconds part of begin time of the first message in the transaction (TCAP-Query). It appears in the form of a decimal number of milliseconds.	16 bits	UNSIGNED
Got from frame header given by capture system (MSW / xMF).				
Length	Length.	Number of Bytes of the Message Signal Unit.	16 bits	UNSIGNED
Decimal value.				
SCCP Mess Type	Sccp message type code	Message type use to provide connected (BSSAP), or connectionless services (INAP, MAP...).	8 bits	ENUM
#00001001: Unit data: UDT. #00001010: Unit data service: UDTS. #00010001: Extended unit data: XUDT. #00010010: Extended unit data service: XUDTS. #00010011: Long unit data: LUDT. #00010100: Long unit data service: LUDTS. 255: Not available:-				
TCAP mess type	Tc message type.	Primitive used by sub-layer between two successive requests.	8 bits	ENUM
0x01: SSA subsystem-allowed. 0x02: SSP subsystem-prohibited. 0x03: SST subsystem-status-test. 0x04: SOR subsystem-out-of-service-request. 0x05: SOG subsystem-out-of-service-grant. 0x06: SSC SCCP/subsystem-congested. 0x61: TC uni. 0x62: TC begin. 0x64: TC end. 0x65: TC continue. 0x67: TC abort. 0xFF: Unknown:-				
Cg-SSN	Cg-SSN of SCCP global title.	Sub system number from SCCP calling party number of global title, identifies an SCCP address of a node.	8 bits	ENUM
0x00: SSN not known or not used. 0x01: SCCP management. 0x02: reserved for ITU T. 0x03: ISDN user part. 0x04: Operat., Maint. and Admin Part: OMAP. 0x05: Mobile application part: MAP. 0x06: Home location register: HLR. 0x07: Visitor location register: VLR. 0x08: Mobile switching center: MSC. 0x09: Equipment identifier center: EIC. 0x0A: Authentication centre: AUC. 0x0B: ISDN supplementary services. 0x0C: reserved for international use.				

0x0D: broadband ISDN edge-to-edge applications.
0x0E: TC test responder.
0x8E: RANAP.
0x8F: RNSAP.
0x91: GMLC (MAP).
0x92: CAMEL.
0x93: GSM-SCF (MAP) or IM-SSF (MAP).
0x94: SIWF (MAP).
0x95: SGSN (MAP).
0x96: GGSN (MAP).
0xFF: reserved for expansion of national and international SSN.

Cd-SSN	Cd-SSN of SCCP global title.	Sub system number from SCCP called party number of global title, identifies an SCCP address of a node.	8 bits	ENUM

0x00: SSN not known or not used.
0x01: SCCP management.
0x02: reserved for ITU T.
0x03: ISDN user part.
0x04: Operat, Maint. and Admin Part: OMAP.
0x05: Mobile application part: MAP.
0x06: Home location register: HLR.
0x07: Visitor location register: VLR.
0x08: Mobile switching center: MSC.
0x09: Equipment identifier center: EIC.
0x0A: Authentication centre: AUC.
0x0B: ISDN supplementary services.
0x0C: reserved for international use.
0x0D: broadband ISDN edge-to-edge applications.
0x0E: TC test responder.
0x8E: RANAP.
0x8F: RNSAP.
0x91: GMLC (MAP).
0x92: CAMEL.
0x93: GSM-SCF (MAP) or IM-SSF (MAP).
0x94: SIWF (MAP).
0x95: SGSN (MAP).
0x96: GGSN (MAP).
0xFF: reserved for expansion of national and international SSN.

OTID	Originating transaction ID.	Origination transaction ID of the frame.	32 bits	HEXADECIMAL

DTID	Destination transaction ID.	Destination transaction ID of the frame.	32 bits	HEXADECIMAL

Nb missing units	Number of missing signalling units (bad stored).	Number of Signaling Units (SU) relating to the xDR and which could not be stored (on PDU Storage	8 bits	UNSIGNED

See document 909-1571-01

Protocol	Protocol.	Indicates the supervised protocol for which the xDR has been created	8 bits	ENUM

See document 909-1571-01

DPC	Destination point code.	Signalling point destination of the message. Appears in decimal, hexadecimal on 14 bits (or 24 bits) or in international 3-8-3 (or 8-8-8) bit notation depending on program configuration. Value from 1 to 16383 (or 16777215).	32 bits	POINT_CODE

MAX:0
NULL:-1

OPC	Originating point code.	Signalling point originating the message. Appears in decimal, hexadecimal on 14 bits (or 24 bits) or in international 3-8-3 (or 8-8-8) bit notation depending on program configuration. Value from 1 to 16383 (or 16777215).	32 bits	POINT_CODE

MAX:0
NULL:-1

Link	Signalling link.	User label assigned to the configuration of the link on which the message signal unit was observed.	64 bits	STRING
(8 Chars).				